INSIDE: WHAT TO DO ABOUT LARGE CARNIVORES

Montana Outdoors

MONTANA FISH, WILDLIFE & PARKS | $3.50

SEPTEMBER–OCTOBER 2013

WHO'S THERE?

Deer and elk may already know you're coming

IN THIS ISSUE:

ECHO FROM THE PLEISTOCENE

TIPS FOR BETTER WINGSHOOTING

SINGING THE GRAY PARTRIDGE BLUES

A HUMBLE MILLIONAIRE'S GREAT GIFT TO MONTANA

Montana Fish, Wildlife & Parks

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Montana Outdoors

SEPTEMBER–OCTOBER 2013

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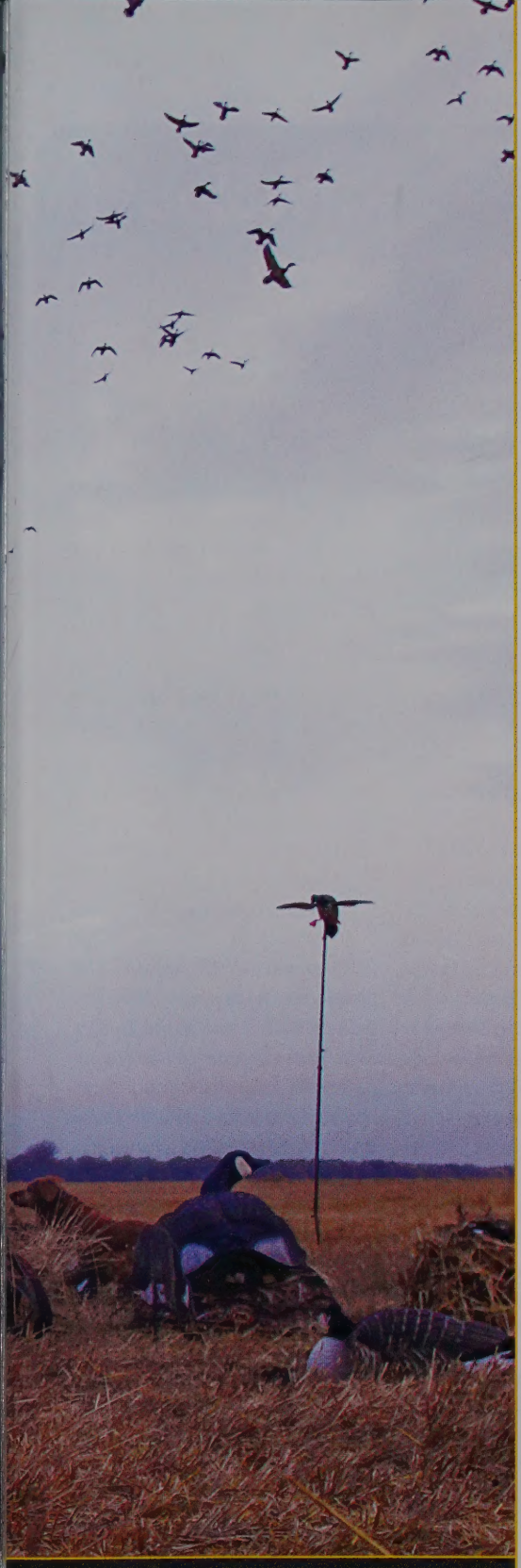

TOO SOON?
Hunters in field blinds fire at incoming mallards. See page 28 to learn why some of these shots may have missed their mark. Photo by Gary Kramer.

FRONT COVER
A suspicious bull elk turns to see who's approaching. Did a bird or squirrel tip him off? See page 15. Photo by Donald M. Jones.

Yellowstone

In reference to your article on irrigation dams ("Yellow Light on the Yellowstone," May-June), one very important fact you didn't mention was the vast amount of water that irrigators take from the Yellowstone. Intake is the last of a long line of diversion dams on the river, and when the gates are open to start irrigating, half the river's flow is used by the irrigation system. And it's getting worse. With pivot irrigation becoming increasingly economical, more and more dry land is being converted to irrigated cropland. As a result, aquifers and rivers (big and small) are being sucked nearly dry.

Russell Utter
Sidney

Work of art

All your issues are outstanding, but the July-August "Best 100" issue is truly a work of art. And all the "Where, When, How, and Bonus" tidbits are frosting on the cake. I'm reading and enjoying every word of this issue and making my wish list for places I haven't been to yet. Thank you.

Gerta Mular
Dillon

As an expatriate third-generation Montanan (Great Falls native and one-time Flathead resident), I enjoyed reading the recommended activities and sights in your "Best 100" issue. We have done or seen many, and the memories that came back are great. The remainder probably won't get done, but they are still nice to think about. Thank you for a creative idea and a great issue.

Harry Johnson
Redwood Falls, MN

Southern snake sighting

A March-April 2013 article noted: "In Montana, the smooth green snake has been observed only in three northeastern counties." Around seven years ago, one looked me in the eyes from its perch on the wrought-iron fence surrounding our vegetable garden outside *Billings*. No one believed me until I later found information and photos online that confirmed what I saw.

Janice Munsell
Billings

Yellow Light on the Yellowstone

FWP proceeds with caution as it works to maintain the lower Yellowstone River's diverse native fishery in the face of diversion dams, water withdrawals, and growing numbers of anglers.

By Parker Rabiola

RMEF deserves credit, too

Your March-April article on wildlife migrations, "Incredible Journeys," rightly credited FWP biologists, participating ranchers, the National Wildlife Federation, and the U.S. Fish & Wildlife Service in helping maintain wildlife connectivity. But you were remiss not to also mention Montana's homegrown Rocky Mountain Elk Foundation and its work to buy conservation easements, protect core habitats, and broker the protection of migration routes.

Wilson McKibben
Vancouver, WA

Counting pheasants with the U.S. Air Force

I enjoyed "Counting Crows" in the May-June issue, but have to note that in our corner of Montana 30 or so years ago, crow counts were done differently. We lived in the Mission Valley, on the Flathead Reservation, where pheasants were numerous. Regular flights of a very fast high-altitude Air Force plane—I believe the SR-71—were refueled by a tanker out of Malmstrom Air Force Base in Great Falls.

The pilot's orders were to return to altitude as quickly as possible after refueling. Given that the aircraft could fly faster than a .30-06 bullet, "as quickly as possible" meant promptly breaking the sound barrier and creating a sonic boom. Rooster pheasants did not take the loud noise cheerfully, and all within hearing distance immediately crowed with what was probably displeasure. Alerted to when the sonic boom would occur, biologists, both state and tribal, stood ready with their counters. And so the instantaneous pheasant crow count came to be.

Dwight Tracy
Port Charlotte, FL

Write to us

We welcome all your comments, questions, and letters to the editor. We'll edit letters as needed for accuracy, style, and length. Reach us at Montana Outdoors, P.O. Box 200701, Helena, MT 59620-0701. Or e-mail us at tdickson@mt.gov.

Corrections

May-June 2013 issue: *On our map of the Yellowstone River, we mislabeled the town of "Sidney" as "Sydney." Our apologies to all Sidney residents. Also, the caption for the cover photo should have read "Near Pompeys Pillar on the lower Yellowstone River" and not "Pompeys Pillar..."*

July-August 2013 issue: *The photo accompanying "Hike up Square Butte" was of the Square Butte near Cascade, not the Square Butte referred to in the article (correctly shown below). The cost of a Blackfeet Reservation season fishing permit is $75 not $50. The distance from Eden Bridge to Cascade is 16 miles, not 6. And, according to the Montana Birds Records Committee, our state is home to 428 bird species, not 468.*

JOHN LAMBING

Duck with maple bourbon gravy

By Tom Dickson | Cook Time: 40 min. | Serves: 4

HOLLY A. HEYSER

Last year may have been the best waterfowl season any of us will have in a long time. Duck numbers were at record highs in the Central and Pacific Flyways and, from all reports, hunting was great across Montana. My family ate duck throughout fall and winter, and now, with the upcoming season fast approaching, we still have several birds remaining in the freezer. The same is likely true for many other waterfowl hunters.

As mentioned in a previous issue of *Montana Outdoors* ("Duck Done Deliciously," September-October 2005), my favorite way to prepare duck is to butterfly it (by removing the backbone and cutting the wishbone in two from the back with game shears) and then make cuts lengthwise along either side of the breastbone to cook the breast meat faster. I rub olive oil on both sides of the now-flattened bird, sprinkle with Kosher salt, and cook over a hot, oiled grill for just five to ten minutes per side, depending on the size of the duck and my guests' preference for doneness (my wife and I like ours medium rare). I always keep a container of table salt handy to extinguish the inevitable flare-ups caused by dripping fat.

This also produces the single best lunch afterward. I find cold grilled duck even more delectable than the hot version because the luscious fat becomes sweet when cooled. Best of all are the little duck ribs, which I pluck off one by one and strip clean between my front teeth.

As the weather cools and folks are less inclined to grill, I offer another way to prepare those last few ducks in the deep freeze. As is the case with so many great game recipes, this is based on one from Hank Shaw's James Beard Award–winning blog *Hunter Angler Gardener Cook*. It's simply a roasted duck topped with the world's tastiest gravy. This thickened sauce is so yummy it could rescue a freezer-burned shoveler or shot-up goldeneye. Heck, you could pour this sweet, smokey goo over boiled raccoon, invite friends over for dinner, and they'd ask for seconds.

—Tom Dickson is editor of Montana Outdoors.

INGREDIENTS

2 ducks, thawed to room temperature, coated with olive oil, and salted well inside and out *(If using just one duck, slightly reduce cooking times)*
3 T. flour
⅓ c. bourbon, whiskey, or Scotch
½ c. beef stock or water
2 T. maple syrup
1 t. Tabasco sauce
1 to 2 T. heavy cream
Salt and pepper to taste

PREPARATION

Preheat oven to 450°F.

Put the ducks breast side up in a cast-iron frying pan or other heavy, ovenproof container. Roast until the breast meat hits 135°F to 140°F, about 16 to 20 minutes. Remove the ducks from the oven and carve off the breasts. Set them skin side up on a cutting board. Return the ducks to the oven to cook the legs another 5 minutes.

Take the ducks out of the oven again. Move them to the cutting board and put the pan on the stovetop. Watch out for the pan handle; it will be very hot. Turn the heat to medium-high and crisp up the skin on the breasts. This should take about 2 to 4 minutes. Once the skin is crisp, move the breasts to the cutting board, skin side up.

Spoon out all but 3 tablespoons of duck fat from the pan, adding butter if you are short. Mix in the flour. Turn the heat to medium and cook for 5 minutes, stirring occasionally.

Add bourbon, whiskey, or Scotch. Add the stock or water, stirring constantly to combine. Bring to a gentle simmer. Pour in the maple syrup and Tabasco, then add salt and pepper to taste. Simmer for a minute or two. If the gravy is too thick, add more stock. If too thin, let it boil down a bit. Once it's the consistency of Thanksgiving gravy, add the cream and cook 1 minute.

Carve the ducks and give everyone some breast meat and a leg. Serve the duck with mashed potatoes, pouring the gravy over everything. ■

We manage our lands to preserve Montana values

Montana is home to abundant and diverse wildlife, clean water with lots of fish, and a slower pace of life that has disappeared from much of America.

Many call it the "Montana lifestyle."

Montana Fish, Wildlife & Parks staff work hard to maintain the conditions that allow for this high quality of life. One way is through land management practices that preserve natural areas and "working landscapes"—land actively used for productive agriculture—while also maintaining abundant opportunities for hunters and others who enjoy the outdoors.

To make sure FWP is staying true to its mission, Governor Steve Bullock has asked us to explain what we do with the land we manage and why those properties are under FWP authority. Specifically, he requested that we assess our land holdings and then evaluate the operation and maintenance of FWP properties, management priorities, and good neighbor policies. A summary of what we're looking at:

FWP holdings comprise 448,000 acres in conservation easements; 18,178 acres in fishing access sites; 365,271 acres in wildlife management areas; and 38,901 acres set aside in state parks.

That total of about 870,000 acres managed by FWP may sound like a lot, but it's only a small fraction of Montana's land base—less than 1 percent of 94.1 million acres. Under state law FWP pays taxes equal to the amount that a private landowner would pay. In 2012 the department paid more than $767,000 in property taxes to Montana counties.

Governor Steve Bullock has asked us to explain what we do with the land we manage and why those properties are under FWP authority.

The land under FWP jurisdiction falls into two main categories: owned (fee title) and conservation easements. In both, agreements are struck only with willing sellers, and every property's value is appraised by licensed land appraisers. We don't "grab" land from anyone, as some have claimed, and we pay no more than what the property is worth—and often far less, thanks to the generosity and conservation ethics of many sellers.

Fee title land comes in several forms. Some are fishing access sites and some are state parks, but most of the acreage is in wildlife management areas (WMAs). WMAs primarily serve as big game wintering areas, lands on which mule deer, elk, and other species can survive the cold months unbothered by human activities. Another benefit of WMAs is that they reduce the problem of big game competing with livestock for forage on neighboring ranches.

Conservation easements are a totally different way FWP oversees land. Just like fee title sales, conservation easements are voluntary legal agreements made with landowners who wish to sell to us. In purchasing an easement, FWP typically pays 40 to 45 percent of the property's value. In return, the landowner agrees to keep the land in traditional agricultural use, employ agricultural practices such as rotational grazing that benefit wildlife, and forego certain development opportunities such as subdividing. In addition, most easements provide public access for hunting.

Landowners still own the property, which in most cases continues to stay in agricultural production. And owners can sell or pass the land on to heirs. But the title carries the agreed-upon terms of the easement, which are negotiated to remain with the land forever.

Why purchase conservation easements rather than use the money to buy wildlife lands that FWP would own? The 1987 Montana Legislature passed a law creating what is today known as Habitat Montana. The legislation directed FWP to protect important habitat that is threatened, primarily by working with private landowners using conservation easements.

Money to fund Habitat Montana comes from hunting license fees—none comes from the state's "checkbook" (general fund)—

FWP

and amounts to about $4 million annually. Over the past 35 years Habitat Montana has protected and enhanced several hundred thousand acres of wildlife habitat across the state.

Conservation easements serve purposes as varied as keeping sagebrush communities intact for sage-grouse and connecting wildlife corridors for big game migration. They also provide more wildlife habitat bang for the buck, because they cost less than buying land.

Whether through fee title ownership or conservation easements, land tied to FWP is managed carefully to take into account wildlife stewardship, neighboring landowner concerns, and the public's desire to hunt and fish. That's a tall order, but FWP is definitely up to the task.

Preserving Montana's famous quality of life is far too important for us to do otherwise.

—**M. Jeff Hagener,** *Montana Fish, Wildlife & Parks Director*

PAUL N. QUENEAU

WEED WHACKER

DAVE DZIAK
Wildlife Area Manager, Missoula Region

THIS MORNING I'M ON Spotted Dog Wildlife Management Area (WMA), just east of Deer Lodge, checking the roots of a spotted knapweed plant for the larvae of the insect *Cyphocleonus*. We released about 8,000 adult insects on the WMA last summer to control knapweed. The weed outcompetes native grasses, forbs, and shrubs and infests adjacent properties, causing problems there. We've been using insects to control weeds on WMAs for years through a multi-faceted approach that includes applying herbicides, mowing, hand pulling, and other practices, all with the goal of keeping infestations down to an acceptable level. The insects are cost effective and don't harm native vegetation. They also spread onto neighboring lands and control knapweed there, too. It's all part of our responsibility to improve wildlife habitat on our lands while being good neighbors to the folks who own property adjacent to ours.

Colorado photographer and former Montana resident **REBECCA STUMPF** was hiking in the Bitterroot Mountains during a drizzly, overcast day in October when a flash of color caught her eye. "Almost all the leaves were down at that point, but there was a small bunch of leaves still in fall colors and even containing some green," she says. "It was one of those days with flat, gray light, and so the colors really popped from a distance." Stumpf says she used a narrow depth of field to keep the center leaves in focus while blurring those in the back and front to highlight their bright colors. "I didn't want to draw attention to any one leaf but instead tried to show the grouping as I'd seen it while walking past on the trail," she says. ■

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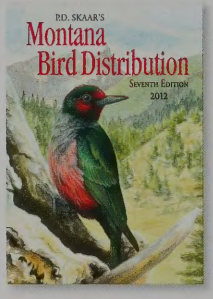
Percentage of Montana hunters who are female (the U.S. average is 9 percent).

Where the wild birds are

Bird ID books, like *The Sibley Guide to Birds*, are great for helping differentiate one species from another. Equally valuable for birders are maps showing if the species they think they see is in fact one that occurs in that part of Montana.



Making life easier for birders is the newly revised 7th edition of P. D. Skaar's *Montana Bird Distribution*. The book contains maps for all species observed in Montana, showing both breeding and wintering range.

The book is a cooperative project among Montana Audubon, the Montana Natural Heritage Program, FWP, and the Montana Bird Records Committee. Donations to Montana's nongame wildlife tax form checkoff helped fund the project.

Buy the book ($15 plus shipping) from Montana Audubon at mtaudubon.org. ■

The eggs of fall-spawning female bull trout, like those accompanying the males pictured here, hatch a few months earlier in spring than those of spring-spawning rainbow and cutthroat trout.

FISHERIES

The eggs of autumn

Deer, elk, and moose aren't the only ones with mating on their minds this time of year. Though most people consider fish to be spring spawners, many species in Montana reproduce anywhere from September through early December. Bull trout, for instance, lay eggs from mid-September through early October, and peak spawning for ciscoes (close relatives of lake whitefish) occurs right around Thanksgiving. Brook trout, brown trout, and lake trout also spawn while the aspen and tamarack are turning golden.

Notice any similarities among those species? All are salmonids. Jim Vashro, FWP regional fisheries manager in Kalispell, says he doesn't know why, of all fish families, only the salmonids spawn in fall. But he does know that fall spawning can give those fish a competitive advantage over rainbow and cutthroat trout, which spawn in spring. "When eggs are laid in fall, they incubate over winter in gravel and then hatch one to two months earlier than eggs laid in spring," he says. "That gives those fry a chance to get a bit bigger so they can outcompete the fry of rainbows and cutthroats for food and other resources."

Of course, there's some risk with autumn spawning, notes Vashro. "Rain can fall on snow, which often happens up here in January and February, and cause flooding that washes eggs out of the redds," he says. "Or it can get so cold that shelf ice forms on stream bottoms and freezes the eggs."

Why don't any warmwater fish spawn in fall? Vashro can only speculate. "Salmonid fry eat insects at a young age, and insects are in the water year-round, so that's a food source available in early spring when they hatch," he says. "Warmwater fry eat mainly plankton, and that food requires lots of sunlight and warm water, and you don't see those conditions until late spring. So there doesn't seem to be any biological advantage for a perch or a bass to spawn in October or November."

A side note to all this is the burbot, a coldwater Montana native that is a member of the cod family. Burbot spawn in January and February. That's the same time Atlantic cod spawn, thousands of miles away in the ocean. ■

Montana's Fall Spawners

Bull trout	mid-September–early October
Brook trout	October–November
Brown trout	October–November
Mountain whitefish	November–early December
Lake whitefish	October–December
Pygmy whitefish	late November–December
Cisco	late November–early December
Kokanee salmon	late October–November
Chinook salmon	October–November
Lake trout	late October–November

Spawning times can vary slightly based on location, seasonal water temperature, and weather.

CLOCKWISE FROM TOP LEFT: ILLUSTRATION BY MIKE MORAN; JOEL SARTORE/USFWS; TOM DICKSON; SWEETWATER RODS; SHUTTERSTOCK

HUNTING

(Too) hot on the trail

A cupped tongue is one sign of overheating. Dogs don't know better, so hunters need to closely watch for clues.

September is a much-anticipated month for upland bird hunters. Unfortunately, it's also the most dangerous time for their hunting dogs. Overeager pointers and retrievers often overheat in the September sun, their owners oblivious to warning signs.

"Heat stroke is caused when a dog's body can't dissipate heat fast enough," explains Lucas Thomi, a Helena veterinarian. "Dogs don't sweat as we do but instead try to cool down by releasing body heat from their tongue." When the animal's body gets too hot to "pant out" the heat, Thomi warns, the dog can collapse and die. "Overheating happens most often in early season with the combination of hot temperatures, overweight dogs, and lack of proper conditioning and acclimation," he says. "On hot days, I recommend getting into the field early in the morning and then packing it up by midmorning." ■

Canine heat stroke warning signs

- Rapid panting (hyperventilation)
- Swollen or bright-red tongue that's cupped at the end
- Vomiting
- Glassy eyes
- Erratic gait or wobbling
- Dazed, confused behavior
- Strings of thick, clingy drool hanging from the mouth

Prevention

- Take it easy the first days out to let your dog acclimate to running hard in hot weather.
- Hunt early in the day, when it's coolest.
- Take frequent breaks in the shade.
- Bring lots of water with you in the field. Don't count on finding a spring or a stock pond where the dog can drink. Camelpaks and similar portable reservoirs are easier to carry and hold more water than bottles.
- Carry a rectal thermometer. A temperature of 103 degrees F. or above generally means the dog is suffering from heat stroke.

Emergency

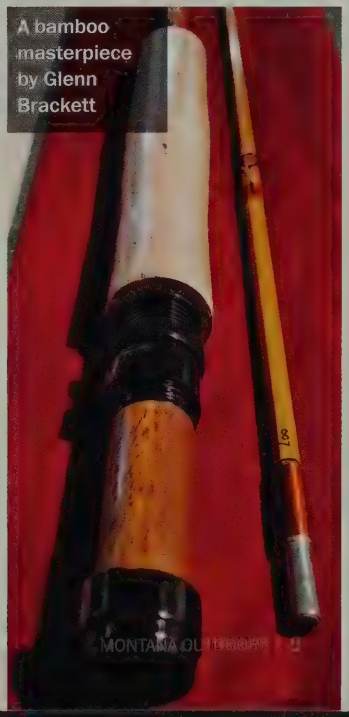
- **An overheated dog that's stumbling and disoriented is likely near collapse.** Walk the animal on a lead to your vehicle, get it into the front seat, and crank up the AC. Drive to the nearest cool water source where you can immerse your dog in water, or rush it to the closest vet's office.

Rod and bow makers honored

The Montana Arts Council recently recognized a bamboo rod maker and a bow maker with its Montana's Circle of American Masters award. Rod maker Glenn Brackett of Butte, formerly a co-owner of Winston Rods and now owner of Sweetgrass Rods, was recognized for excellence in designing, building, and restoring traditional bamboo rods. Jim Rempp of Missoula was honored for the craftsmanship displayed in the more than 1,000 traditional longbows he has made from yew, as well as Osage, juniper, and serviceberry.

Montana's Circle of American Masters honors the state's rich heritage and showcases current folk arts such as leatherwork, blacksmithing, bladesmithing, beading, and silversmithing. (For nomination guidelines, visit art.mt.gov.)

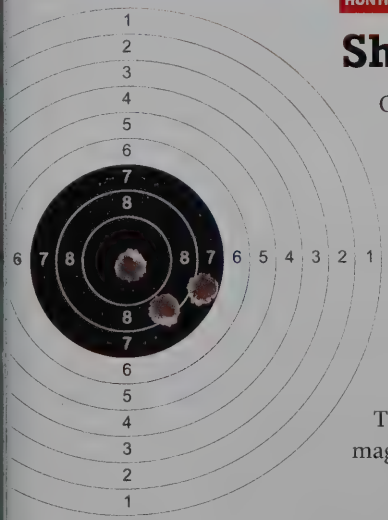
"Beyond making beautiful devices for fly-fishing and archery hunting, Glenn and Jim, through their mastery of craft, actually deepen our awareness of what it means to be a Montanan," says Cindy Kittredge, folk arts and market development specialist for the Montana Arts Council. ■



A bamboo masterpiece by Glenn Brackett

HUNTING

Shoot first, hunt later



On the *Field & Stream* gun blog, firearms editor David Petzal and readers were discussing the best rifle for elk hunting. As could be expected, everyone had his or her own favorite firearm and swore by its accuracy and knockdown power. Then a Wyoming outfitter logged on and made a point that every big game hunter should keep in mind this time of year:

"In real estate the saying is, Location, location, location. I guide and hunt in the famed Thorofare [River] drainage outside of Yellowstone, and around here the saying is, Practice, practice, practice. No matter what rifle you use—hopefully a .270 or larger—shot placement is the key. Practice lying down, sitting, and standing with shooting sticks. Then practice some more. A poorly placed shot, even with a supermagnum rifle, will not do the job." ■

WHEN BIG GAME

Short-faced bears standing 12 feet tall, massive dire wolves, mammoths weighing up to 10 tons—at one time hunting in Montana was a highly dangerous necessity.

BY HAL HERRING

WAS BIG

ILLUSTRATION OF EARLY NATIVE AMERICAN HUNTERS STALKING A WOUNDED MAMMOTH BY ROY ANDERSEN

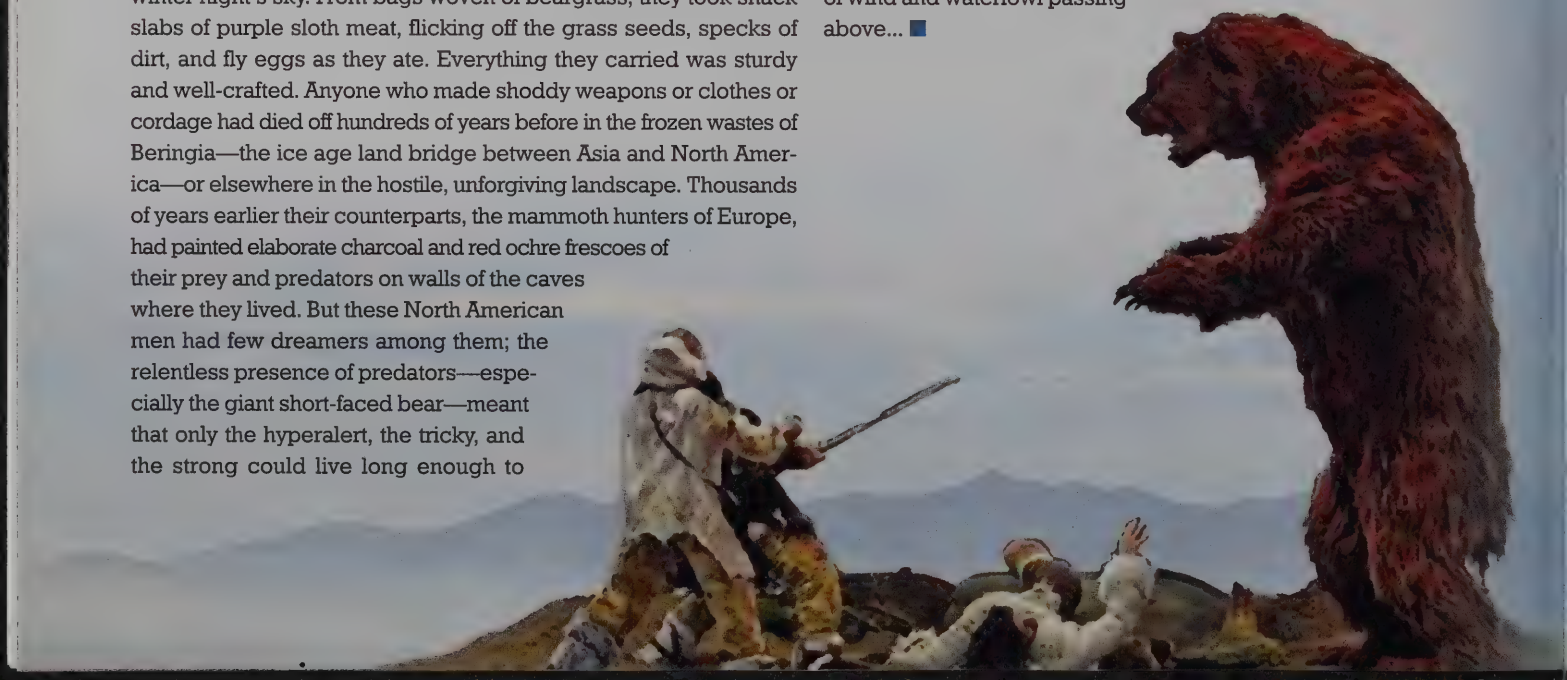
Mid-September, 12,000 years ago, 20 miles east of Choteau, Montana...

The noon sun poured down hot and strong, burning away the last of the frost. Weather brewed above the ice-clad western mountains, the boiling gray clouds rising high and tumbling like waves above the plains. The hunters moved at a slow trot and held to the high ground, avoiding the brush-choked coulees where they would be easy prey for the huge lions that sheltered under the cutbanks waiting out the daylight. Five men, long-haired and sparsely bearded, were clad in stiff mammoth skin, woven mastodon-hair tunics, camel-hide leggings, and warm hats made of soft hare or dire wolf neck. They carried spears with shafts of bodock wood and foreshafts of mammoth ivory. The hand-sized spear points, flaked from northern Yellowstone chert to razor sharpness, were bound tightly to the ivory with sinews from mastodons or mammoths, and the spears were stained with red ochre and blood. Dried blood also clotted the men's beards, and it blackened their hands and forearms and the skin around their mouths. After they reached a low butte, all of them checked a different direction for danger before clambering up to a notch in the rimrock. The leader stopped to study the top of the butte for peril or game before committing himself to the last few feet of the climb.

High ground meant a moment of peace, where no great cheetah could run you down, no saber-tooth could leap from hiding upon you. The dire wolves—roughly 30 percent larger than today's gray wolves—saw no need to climb when there was prey aplenty on the flats. The hunters rested at the edge of the rimrock, sitting just back from the edge to avoid skylining themselves to whatever might be watching from below. They set their spears down but kept them close at hand. The three hunters who carried atlatls took the quivers off their shoulders, glad to be free of the beautiful but awkward-to-carry darts, 5-foot shafts of straight skunkbrush, fletched with crane feathers and tipped with thumb-sized points of obsidian black as a winter night's sky. From bags woven of beargrass, they took snack slabs of purple sloth meat, flicking off the grass seeds, specks of dirt, and fly eggs as they ate. Everything they carried was sturdy and well-crafted. Anyone who made shoddy weapons or clothes or cordage had died off hundreds of years before in the frozen wastes of Beringia—the ice age land bridge between Asia and North America—or elsewhere in the hostile, unforgiving landscape. Thousands of years earlier their counterparts, the mammoth hunters of Europe, had painted elaborate charcoal and red ochre frescoes of their prey and predators on walls of the caves where they lived. But these North American men had few dreamers among them; the relentless presence of predators—especially the giant short-faced bear—meant that only the hyperalert, the tricky, and the strong could live long enough to sire children. Their clothes and weapons were barely adorned, the ivory marked with simple hatches or circles or stripes of ochre. They were nomads, with few havens, always on the move, constantly under siege from the bears that were relentlessly stealing their carcasses and attacking their camps. Their art was in their lives—intense, dangerous, often short, packed to bursting with the power of the hunt, the heat of blood, and the wealth of meat and fat.

Below them the brush, low trees, and tall grasses of the prairies yawned eastward, where immense columns of remnant ice glittered along the edge of a lake that seemed to have no end. A waving clump of serviceberry marked where a giant sloth was feeding only a quarter-mile distant, but it was in a blind swale too dangerous for the hunters to approach. A band of pronghorn passed, staying to open ground. The hunters ignored them—no use wasting effort on a wary animal that could sometimes outrun a cheetah.

They all saw the mammoth at the same time, a dark shape far out against the olive-colored plain, moving toward them. The men felt no need to hurry. Though the mammoth was capable of a fast run, it, like the other huge beasts of the era, grazed and moved slowly unless attacked. The hunters would kill in bold and carefully orchestrated attacks, the atlatl darts serving to drain and slow the massive prey animal, to set it up for the finish with spears. The long, slow killing, the blood trailing, the rush and thrust and battle were nothing compared to the challenge of trying to keep the kill. The butchering of a mammoth was a dance at the sharp edge of a predatory abyss, attended by dire wolves, saber-toothed cats, even huge wolverines. The short-faced bear trumped them all. The massive beast could smell blood on the wind from miles away and would come lumbering in like a tank to take it from the hunters, and try to kill them in the process. What meat the men could not haul back to camp in one trip was probably lost to the unstoppable carnivore, standing 12 feet tall and weighing half again as much as today's grizzly. For the luckiest and the strongest, though, there was the camp that every hunter of every epoch knows, where loved ones work and talk beside blazing fires, hoping for meat and safe return, where the laughter of children mingles with the sound of wind and waterfowl passing above... ■



Wherever we hunt this fall in Montana, we walk in the footsteps of ancient hunters very similar to ourselves. The Clovis people were named after the massive and beautifully flaked tools they used, first discovered in the 1930s near Clovis, New Mexico. The Clovis may have come from today's Siberia and Alaska during the waning years of the last ice age, venturing down to the United States by way of an ice-free corridor—a break between the Laurentide and Cordilleran ice sheets that ran east of the Rocky Mountain Front from Alberta south to what is now the Great Plains. According to a more recent theory, the Clovis came from Siberia by boat along the edges of the ice shelf that covered the Bering Sea, and then worked their way inland. Still other scientists claim evidence that the Clovis drifted north to the Great Plains from the forests of the southeast and Midwest. Nobody knows.

What is certain is that at one time the Clovis people were here in Montana. These were not cavemen or Neanderthals; they were not vastly different in appearance from us. "Montana is the special place," says Doug Peacock, who lives in Livingston. His new book, *In the Shadow of the Sabertooth*, offers a deep look at the first peoples of North America, the incredibly diverse megafauna that sustained (and often killed) them, and what happened to man and beast alike as the climate warmed after the last ice age. "There is evidence that people were here as early as 13,000 years ago, a scattering of pilgrims, perhaps, who would have run into the mammoths in southern Alberta and hunted camels and sloths and horses," Peacock told me. "But it's not until the giant invasion that we call the Clovis—who discovered and quarried the flint and chert south of the Missouri River, and flaked the huge tools—that we see the obvious mammoth hunters."

PHOTO ILLUSTRATION OF HUNTERS FENDING OFF A SHORT-FACED BEAR BY LUKE DURAN/*MONTANA OUTDOORS*; CLOVIS SPEAR POINTS BY CHIP CLARK/*SMITHSONIAN*

In 1968, a heavy equipment operator in the Shields Valley near Wilsall uncovered, at the base of a cliff, a Clovis burial site that would yield some of the most spectacular ancient tools ever seen. Huge spear points of carefully selected multicolored stone suggest that the lack of wall paintings and other artwork left behind by these hunters was not because they did not recognize beauty. Finely wrought tools of bone and antler accompanied the points, along with the skeleton of a child. The burial, known as the Anzick site, is one of the most significant Clovis finds in North America.

From the Anzick site to the ancient chert quarries of Montana City, to the mammoths buried in the Doeden Gravels near Miles City, to the giant sloth and dire wolf remains in Blacktail Cave on the Dearborn River, the evidence confirms that there has never been, before or since, a wilder place or time to be a hunter on this planet than in Montana during the Clovis period.

But this fierce and diverse era did not last long. At some point around 10,000 years ago, the last mammoths died out. The climate warmed and became much drier. Gone were the giant sloths, the beavers big as ponies, the horses and camels, along with most of the predators that followed them, the dire wolves and saber-toothed cats, the cheetahs and lions. Without the mighty grazing beasts, the mixed shrublands grew so thick that fire became a more regular part of the environment, favoring the prairie

The evidence confirms that there has never been, before or since, a wilder place or time to be a hunter on this planet than in Montana during the Clovis period.

Hal Herring of Augusta has written for The Economist *and* The Atlantic Monthly *and is a contributing editor for* Field & Stream.

grasses that dominate today.

The Clovis people disappeared, too. Or, like the landscape around them, they morphed into something else, adapting to changes in climate, vegetation, and prey, driven and altered by their own restless searching for better weapons, better technology. Within three millennia, Montana began to look much more like we know it, or at least as the Lewis and Clark Expedition recorded it. The antique bison and the giant long-horned bison were gone, but *Bison bison*, the ones we know today, were beginning their heyday. The speedy pronghorn never left; their populations exploded in the empty niches left behind by the extinctions. Mule deer and elk, adapted to grasslands, thrived. Gray wolves, no longer held in check by the more powerful dire wolves, came back strong, as did coyotes. The trend was to the smaller, the faster, the wilier.

For Montana's human hunters, too, it was a time of forced adaptation. The Folsom people (named after spear points first found near Folsom, New Mexico) that appeared around 10,000 years ago had abandoned the finely flaked and massive spear points of the Clovis. Instead they developed smaller, more efficient weapons, more suited to the new dominant prey animals of the plains, especially the bison. The Folsom made more knives, more hide scrapers, more atlatls. There was a wealth of prey in the species that had survived the great transition with them, but no human hunter could run as fast as a bison, much less a pronghorn. No man was strong enough to leap like a mountain lion and kill an elk. Physically outclassed in every way, our ancestors made the classic human decision to employ brain over brawn. Weapons technology and the mechanics of obtaining meat went through rapid change.

The great drawback of the atlatl is that, to use it effectively, a hunter must be standing up, in the open. It is not a weapon of stealth or ambush. Even the sound of the throw—the "whoosh"—can be enough to startle a deer or antelope and allow it to escape. Use of the bison jump—dating to around 12,000 years ago, and of which Montana alone contains more than 300 sites—likely became more common during the Folsom period. So did driving pronghorn and other game into "pounds," or rock enclosures, that would slow or entrap them. Since horses did not arrive here until the mid-18th century, early hunters built cairns at strategic points for miles at a stretch, where hunters could conceal themselves and leap up, perhaps waving a hide or other object, to stampede their prey in the direction of the jump or pound. At a Madison Valley site, pronghorn were driven over what is no more than a steep embankment into a creek bottom. It did not matter whether the jump killed the prey; injury was sufficient, anything to slow the animals down and give the human hunters a fighting chance to feed themselves and their families.

As we venture forth this fall, hunting alone or with friends and family, we might take a few minutes to imagine a time when we were as often the prey as the predator.

Like killing a mammoth or mastodon, using jumps and pounds for hunting was a communal effort. Until the appearance of the bow, about 2,000 years ago in North America, the idea of the lone hunter—so much a part of our recent history of mountain men and trappers and adventurers—was probably alien to human cultures.

As we venture forth this fall, hunting alone or with friends and family, we might take a few minutes to imagine a time when we were as often the prey as the predator. Instead of the smooth bolt of the Remington 700, we worked the rough wood of a spear handle. Instead of a tiny .30-caliber copper-jacketed missile propelled by a burning mixture of the earth's chemicals discovered by 7th-century Chinese alchemists, we used raw muscle to force a hand-sized chunk of flaked stone between giant ribs. Hunting has changed in substantial ways—most importantly that failure no longer means death—but the goals are not so different from thousands of years ago: meat and hides to share, the taking of an animal's life with skill and honor, the fierce freedom of our wild spaces and all that inhabits them. There is an echo, from the Pleistocene, that only a hunter can hear.

ILLUSTRATION OF HUNTING BISON WITH ATLATL BY DANIEL ESKRIDGE

They Know You're Coming

New University of Montana research shows that a hunter's stealthy approach may set off wildlife alarm bells the moment he or she enters the forest.

BY JOE NICKELL

LIKE MANY HUNTERS, your case of buck fever began to develop weeks before the season as you pored over copies of *Outdoor Life* or *Petersen's Hunting*, reading up on the latest strategies and pondering the newest high-tech gear. A few days before Montana's big game opener, you dutifully washed your jacket in fragrance-free detergent and stopped by your favorite outdoor equipment store to grab some Scent-Lok longjohns.

On the day of your first hunt, you parked your truck along a road where you always see deer or elk crossing, gathered your hunting gear as quietly as possible, and crept into the timber at first light, your nose into the wind.

A short while later, you might have stopped to marvel at the glorious silence of the forest, broken only by a distant bird chirping, *ts-ts-ts*. You stood stock-still, confident of your invisibility as you waited for a buck or bull to emerge into view.

Guess what? Chances are good that every deer, elk, bird, and squirrel within the farthest range of your high-powered rifle was fully aware of your presence. And there's nothing your clothes, soap, or stealthy movement could have done about it.

In fact, those very elements might have been part of what signaled the animals that danger was nigh, says Erick Greene, a professor of biology at the University of Montana.

"By the time you've snuck into an area, the deer and elk have known for quite a while that you're coming," says Greene. "They are

"HERE HE COMES!" Recent studies show that birds and other small animals employ "distant early warning systems" to alert each other of approaching danger. Do elk and other big game animals tap into these signals to learn if human hunters have entered the forest?

CLOCKWISE FROM TOP: SUMIO HARADA; DONALD M. JONES; DONALD M. JONES

fully aware that somewhere in your vicinity there's a sneaky bugger moving slowly and stealthily on the ground. They've got a fix on you." Those are just some of the implications of Greene's latest research, which is shedding surprising light on how animals communicate—often with remarkable detail and even across taxonomical classes—about the presence and nature of danger.

Surprise discovery

Greene's study began several years ago, while he was working on another project that catalogued and analyzed the song-learning techniques of lazuli buntings—small, blue-headed songbirds that congregate on the flanks of Missoula's Mount Jumbo and Mount Sentinel in summer.

As part of that research, Greene tested the territorial behavior of male buntings by playing recordings of other males' songs on loudspeakers hidden in the brush.

Most of the time, the male bird who had staked out that particular plot of land as his own would appear quickly and proceed to make a raucous display of himself, flying around the hidden speaker and singing aggressively. But then, occasionally, something unusual would happen. "All of a sudden, the bird would stop responding and go on high alert," says Greene. "He would get quiet, look around, and then just dive down deep into the nearest bush."

After watching this phenomenon a few times, Greene noticed that not only did the particular male stop singing, but all birds in the area went silent, like hitting a TV's mute button. "Then, a few minutes later, I would hear this ripple of seet calls."

As Greene knew, birds throughout the world use seet calls to warn of flying raptors. Sure enough, whenever Greene heard that wave of calls, he would soon observe a hawk flying through the area.

That much made sense. But something about the experience didn't quite mesh with prevailing theories among biologists about the nature of bird communication.

"The dogma in the literature has been that these specific alarm calls for flying raptors are meant for 'local consumption,' in the sense that they don't travel far. If you're a bird giving a seet call, you're warning only your mate or your chicks," Greene says. "But the observations I've made over the years began convincing me that that's complete hooey. All those buntings in the area knew there was an inbound hawk three to five minutes before the hawk got there. They were all hiding down in the bushes by the time it flew through. That's when the lightbulb came on."

Working with researchers at Cornell University's Lab of Ornithology, Greene began collecting data on what he terms "distant early warning systems" employed by prey animals to protect each other from impending danger. In one of his first experiments Greene set up a series of microphones, each connected to a recorder, along the Kim Williams Trail in Missoula. Greene would play a recording of seet calls made by robins in response to an overhead falcon, and record the response of birds in the area.

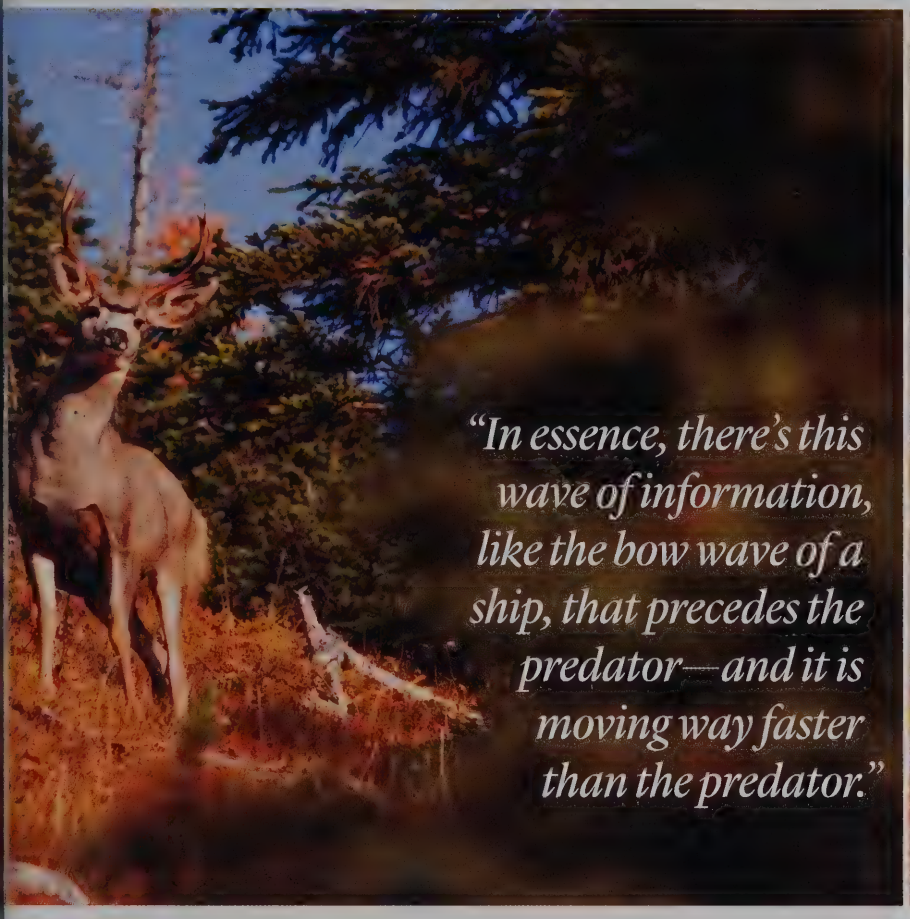
"With this array of microphones, I could record the rapid spread of this band of silence—where the first thing all the birds do is shut up and listen," he says. "Then almost immediately you hear a wave of seet alarm calls."

Greene found that the alarm calls were passed from bird to bird across the landscape at speeds of up to 120 miles per hour. What's more, the warnings often traveled a half-mile or more from their source. "In essence, there's this wave of information, like the bow wave of a ship, that precedes the predator—and it is moving way faster than the predator," he says.

Greene has also found that birds have different types of alarm calls for different types of danger: a call for ground-based predators creeping slowly along, a call for raptors perched in treetops, and so on. If any of this surprises you, it's probably even more unexpected from the hawk's perspective.

"We know that these little birds hear those sounds much better than we humans do because their ears are tuned to them," says Greene. "Another thing we know is that hawks and owls are virtually deaf in that frequency range. So songbirds are

Writer Joe Nickell of Missoula was previously a columnist for the Missoulian, *where this article originally appeared. Used with permission.*


"In essence, there's this wave of information, like the bow wave of a ship, that precedes the predator—and it is moving way faster than the predator."

broadcasting on a channel that their predators basically don't even know about."

Treetop tattletales

For hunters, the problem is that songbirds are not the only ones hearing and sharing this information. "Any hunter is familiar with those pine squirrels that start yakking at you and won't shut up," says Greene. "Those are alarm calls. Squirrels give seet alarm calls for flying raptors, and they give other, acoustically different, alarm calls for terrestrial predators. If there's a squirrel that gets particularly irate with you, you'll hear another one start up, and pretty soon squirrels are talking half a mile away. Every animal in that area knows something is over here, and they have positional information they can basically triangulate.

"That signal contains quite specific information, telling other squirrels and birds in the area that there's something on the ground disturbing it," Greene continues. "If birds foraging on the ground hear that call, you'll see them immediately fly up into the trees, and they will also communicate the information on down the line."

Greene says some species hunted by humans are tuned into these alarm calls. While little specific research exists on big game animals' engagement in the alarm communication network, Northern Arizona University professor emeritus Con Slobodchikoff has shown that prairie dogs give one type of alarm call when a person walks through an area carrying a telescope and tripod, and a different alarm call when a person appears carrying a firearm. "They know that one is a nerdy biologist watching them, and the other is somebody trying to take them out," says Greene. The animals have also been shown to employ different alarm calls in response to people wearing differently colored clothing. "Prairie dogs have learned there's an important distinction, and they are fast to communicate that to one another."

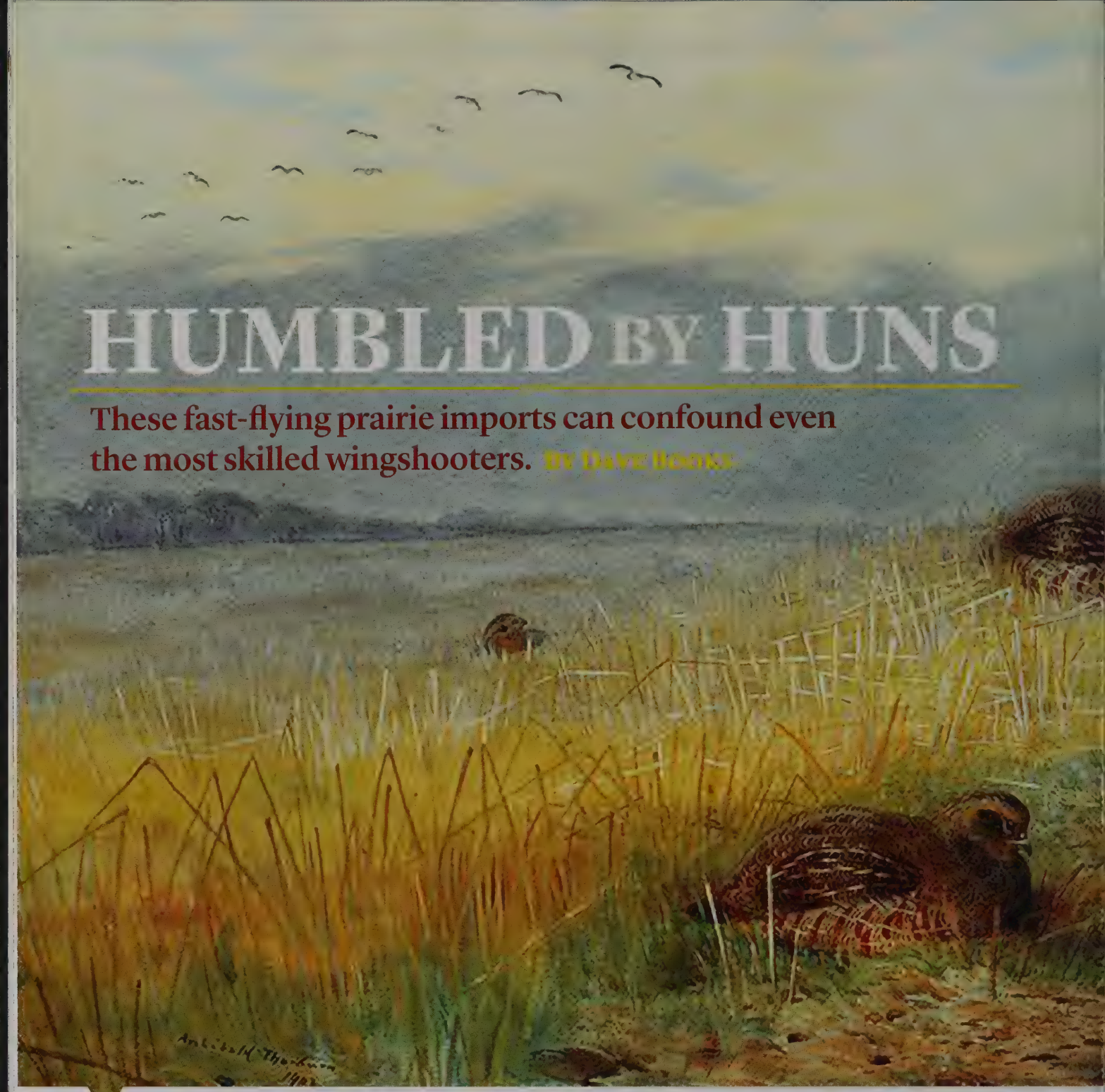
Missing pages?

Of course, as any hunter with a freezer full of meat knows, the alarm process often doesn't work in the animals' favor. "It's not a fail-safe system, obviously," says Greene. Wind, snow, and other environmental elements can muffle alarm calls. During the elk rut, when squirrels sometimes give alarm calls in response to a bull sneaking up on another male's harem, the racket might actually draw the herd bull toward the perceived danger.

And sometimes those typically talkative squirrels simply go about their business, making nary a sound. Still, Greene's research raises intriguing questions that could challenge the prevailing wisdom about slow-stalk hunting.

Might hunters be perceived as less of a threat if they moved casually and quickly through the woods? Is camouflage clothing really a help, or might it signal predatory intent? Do squirrels and birds key into that gun slung over your shoulder? "We don't know the answers to those questions," says Greene. "What I would say is that in the hunting world, people pay a lot of attention to smell. But possibly as important—and in some cases, probably more important—is this information landscape that animals are plugged into but that people don't pay much attention to. You might be doing everything by the book, but the book appears to be missing some pages."

LEFT TO RIGHT: DONALD M. JONES; DEE LINNELL BLANK; TIM CHRISTIE



HUMBLED BY HUNS

These fast-flying prairie imports can confound even the most skilled wingshooters.

By Dave Books

I eased around the corner of the abandoned ranch house and squinted into the warm October sun. My gaze swept quickly over the rusting farm machinery and the dilapidated stable. Except for a light breeze rustling the golden leaves of a cottonwood, things were quiet—too quiet. I felt like I was about to become part of the shootout at the O.K. Corral.

Then I saw what I was looking for—my Brittany, Chief, frozen on point in the brown weeds next to an old hay rake. I didn't know whether to expect a covey of Hungarian partridge, a rattlesnake, or Wyatt Earp. Tightening my grip on the worn checkering of the Browning over/under, I slid my thumb against the safety. As I walked past the dog's rigid form, out of the corner of my eye I could see his pink nostrils monitoring the scent emanating from the grass. "Okay, Mr. Pink Nose, what have you got this time?" I wondered.

THE CALL OF THE GREY PARTRIDGE. WATERCOLOR BY ARCHIBALD THORBURN, 1902

No matter how ready you are for the whir of those stubby wings, you're never really ready. Just as I began to suspect the birds had moved, they exploded from the grass, chirping like a dozen rusty gates in a prairie windstorm. I regained my composure in time to sort one bird out of the blur and stick with it until the sight picture looked right. The bird folded just as the covey veered out of sight around the corner of the stable.

Chief fetched the handsome gray-brown Hun, and I slipped it in my game vest. I hadn't been able to see where the covey had gone, but I guessed the birds would head for the old corral about 300 yards away. Coveys in past years had flown to this collection of rusty barbed wire, boards, tall grass, and weeds. I'd try to find them one more time, then, win or lose, I'd leave them for another day.

After you get to know a covey well enough, you begin to take a personal interest in it. As a hunter, you want to shoot your share of birds, but you also want to leave the covey strong enough to withstand the depredations of foxes, hawks, and winter storms. You know that one evening next spring you'll drive out to the old homestead to watch and listen, worrying a little until you hear the raspy love song of a mating pair. But now it's hunting season, and you're

sure this covey is more than capable of coping with old Pink Nose and his jangle-nerved sidekick.

As much as Hungarian partridge seem to belong on the prairies of western North America, they're not native to the region. Their natural home is Europe, the British Isles, the Scandinavian countries, and parts of Asia, where they are better known as gray partridge. We call them Hungarians because that is where most of our imported birds came from. Huns were released in various locations in the eastern United States throughout the 1800s, but the climate and terrain weren't suitable and those early introductions didn't take. It wasn't until the early 1900s, when Huns were stocked in the wheat belt region of eastern Washington and Oregon, southern Alberta, Montana, and North Dakota, that things began to pop. Maybe "explode" is a better word, since the Hun quickly demonstrated the reproductive capacity that has made it a mainstay of European upland shooting for hundreds of years.

The most spectacular of the western plantings took place in southern Alberta in 1908 and 1909. With the support of a wealthy Michigan bird hunter named William Mershon, a group of Calgary sportsmen released 800 partridge near Calgary. Within five years those birds had multiplied and spread across southern Alberta and into Saskatchewan and Montana. Aldo Leopold later calculated their rate of spread at 28 miles per year.

So successful was the expansion of Huns from the Calgary planting that by the mid-1930s outdoor author Ray Holland could report flushing more than 100 separate coveys in a day's outing on the Saskatchewan prairie. Not bad, considering the Province of Saskatchewan had not stocked a single bird! Those spectacular populations of the 1930s eventually crashed, but not before the Hun had established itself as a game bird throughout the Prairie Provinces and wheat country of the Northwest.

THE ARTIST'S DOG. WATERCOLOR BY ARCHIBALD THORBURN, 1901

Today, southern Alberta and Saskatchewan remain the heart of the Hun range, but Montana, North Dakota, Idaho, and eastern Washington and Oregon also support good numbers. Other states with limited but huntable populations include Nevada, Utah, Wyoming, South Dakota, Minnesota, Wisconsin, and Iowa. Like other upland game birds, Huns are subject to cycles of abundance and scarcity. Although Huns get along better with modern agriculture than most game birds do, they too are hurt by horizon-to-horizon plowing. Even in today's best Hun country, Ray Holland's 100-covey days are a thing of the past.

Hun coveys, which consist of a mating pair, their offspring, and other adults unsuccessful at mating, contain 10 to 20 birds. Hun populations have a 75 percent turnover each year, so a three- or four-year-old bird is an old-timer. Coveys occupy the same favored sites year after year; in good years there may be several coveys in a given locale, while in lean years the population may shrink to a single covey.

Although Huns do best in wheat country where waste grain is available in fall and winter, they don't need it to survive. One fall while hunting an uncultivated area along the Snake River in Idaho, two friends and I ran across an incredibly high density of Huns. We had been chukar hunting, climbing the rocky slopes above the river for most of the day without much luck. Toward late afternoon we dropped down to the grassy benches just above the river and stumbled into the best Hun shooting any of us had seen.

In agricultural areas, hunters will do best by checking the edges of stubble fields in morning and late afternoon when the birds are feeding. During the middle of the day, abandoned homesteads, brushy draws between grain fields, and weed patches are likely to produce birds. Huns favor light cover over thick undergrowth, and I've even flushed them from plowed fields where they were as invisible squatting in the dark soil as if they had been hunkered down in knee-high bunchgrass.

One time my friend Mike Gurnett and I watched a covey sail into a small patch of weeds and grass surrounded by alternating strips of wheat stubble and fallow field. Licking our chops, we quickly covered the 200 yards to the little island of cover. We combed every inch of it—twice. As we stood there scratching our heads, Mike asked, "Where the heck did they go?" Just then the birds flushed from the bare field in front of us, leaving us so rattled we didn't fire a shot.

For a long time the Hun in America didn't get the credit it deserves for being a first-rate game bird. For one thing, it has always lived in the shadow of its showier fellow-immigrant, the ring-necked pheasant. Then, too, there is the nature of the places where most Huns live: big, open country, thinly populated with humans. Local folks may sing the Hun's praises, but perhaps there aren't enough voices out there to be heard

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Dave Books of Helena was a longtime editor of Montana Outdoors. *This essay is from his soon-to-be-released book* Wingbeats and Heartbeats: Essays on Game Birds, Gun Dogs, and Days Afield.
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above the yipping of lonely coyotes.

Good quail or ruffed grouse shots who visit the prairie often wonder how they can miss Huns, where there are few trees to obstruct their view. But Huns often flush farther out than the birds they're accustomed to, and snap-shooting techniques don't work well. With Huns the first shot is often about 25 yards, and the second may be 35 or 40. Once newcomers adjust to the longer distances and stronger follow-through required, they score better. This is not to say that Huns are more challenging targets than quail or ruffed grouse—or vice versa—just different. Wingshooters become programmed for the birds they hunt most often, and it takes time to adjust to something new.

The best Hun shooters are the smooth ones who don't rush things and who swing through their birds strongly but deliberately. Hurrying to put pellets in the air is a common mistake, and when I hear someone rattle off a string of shots I don't expect many casualties. With Huns there is rarely time for more than two careful shots, and a shot at a 14-ounce bird at 35 yards has to be right on target. I hear sport shop talk about triples on Huns, but honest triples are about as common as neck shots on running antelope.

Local folks may sing the Hun's praises, but perhaps there aren't enough voices out there to be heard above the yipping of lonely coyotes.

One thing that complicates Hun shooting is the everlasting prairie wind. When it kicks up, strange things happen to the flight patterns of birds. Duck hunters will understand. I once flushed a Hun into the teeth of a strong wind, and as I watched it over my gun barrel it began to look bigger instead of smaller. Suddenly it tired of bucking the wind, turned, and came directly toward me, buzzing over my head like a feathered bullet. I didn't get that one.

GREY PARTRIDGES IN FLIGHT. WATERCOLOR BY ARCHIBALD THORBURN, 1898

Huns can be humbling. I remember a blustery day when my partners, hunting some distance away, flushed a covey in my direction. I enjoy pass shooting and relished the chance to show off in front of an audience. But these Huns were different—they came at me like shrapnel out of a gunmetal sky, scattered, flying high, and riding the galloping wind. I missed with both barrels, and went on to miss several easier shots after that. So much for overconfidence.

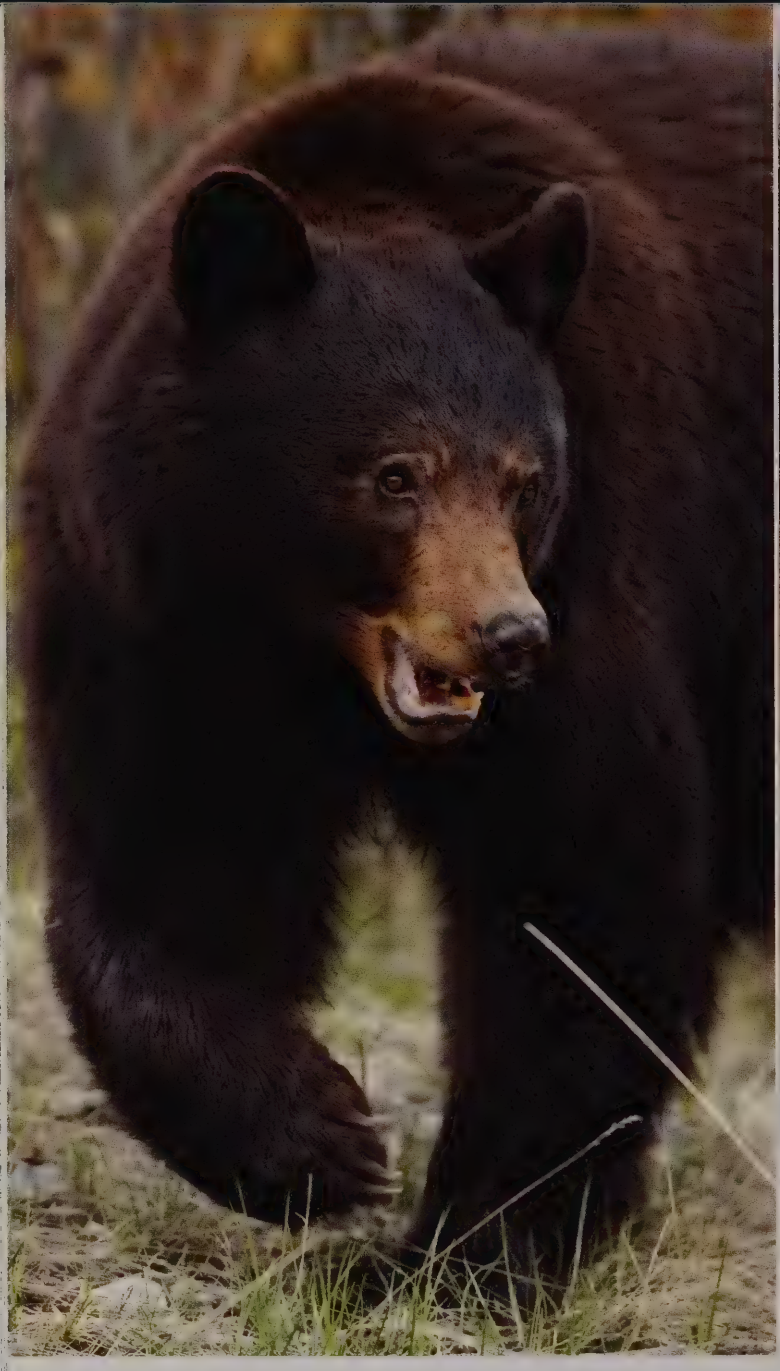
Despite their small size, Huns are tough birds. Many times I've watched one fly 100 yards or more before succumbing to a pellet or two in the body cavity. For that reason, I try to watch the covey as long as I can see it, even if I think I've missed. A bird that drops straight down out of such a covey often will be dead, while a bird that appears to be flying normally but lands short of the others may be wounded.

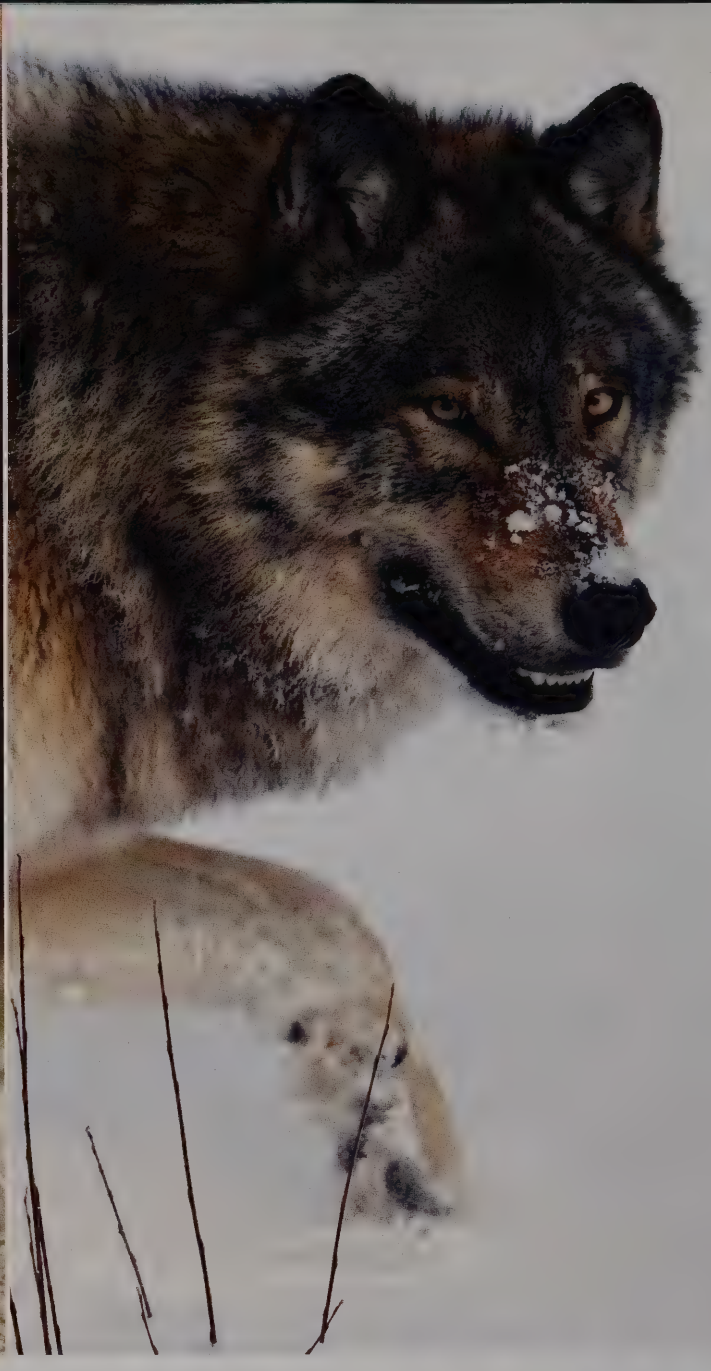
It goes without saying that dogs are a great help in hunting Huns. There is a lot of country to swallow up the birds, and a wide-ranging pointing dog will find more Huns than a close-working flusher. But any good dog is helpful, especially when it comes to finding and retrieving downed birds.

In recent years more hunters have discovered the pleasures of hunting Huns on the northern plains with pointing dogs. Conditions are best in early fall, but I've had memorable hunts later in the year, too. One crisp November day my Brittany, Ollie, made a wide cast into the wheat stubble adjacent to the Conservation Reserve Program field we had been hunting. When he topped a rise and disappeared, I didn't follow; it was late afternoon and I was bone tired. Besides, I figured he'd be back in a minute or two. After five minutes, I trudged to the top of the hill to investigate.

When I topped the hill I beheld a sight guaranteed to warm the heart of any wingshooter and give exhausted legs a sudden shot of adrenaline: 100 yards below, Ollie stood motionless, head high, pointing toward an island of stunted brown weeds in the ocean of wheat stubble. I hurried ahead, expecting a nervous covey to take flight any second. As I closed the distance, my mood ricocheted from doubt to hopefulness to guarded optimism: 50 yards, 20 yards...10 yards...5 yards...suddenly a covey of Huns lifted skyward in a flurry of wings. I dropped a bird with the improved-cylinder barrel of my over/under, then swung well ahead of the last bird in the covey and downed it with the modified choke. Ollie retrieved both birds to hand, transforming a long, luckless afternoon into an instant success.

As we headed for the truck, the sinking sun peeked from beneath a gray cloud bank, casting an orange glow across the landscape. In the distance, the reedy calls of the scattered Huns drifted to us on the breeze—the familiar sound of a covey gathering for the night.





MORE FANGS IN

Montana is home to higher numbers of large carnivores today than any time since the 19th century. Now what? **BY TOM DICKSON**

If Montanans ever decide on a new motto, they might consider something like *Terra Multi Fera* ("Land of Abundant Wild Animals"). Owing to Montana's intact, healthy habitats and science-based conservation practices, the state has long been known as a place teeming with wildlife such as elk, bighorn sheep, pronghorn, mule deer, prairie grouse, and waterfowl.

Now add large carnivores to the mix.

Across much of Big Sky Country, meat eaters are multiplying. The wolf population has grown from just a few dozen animals a decade ago to at least 625 today. Lion numbers have increased steadily after

LEFT TO RIGHT: DONALD M. JONES; DONALD M. JONES

THE FOREST

high harvests in the late 1990s. Grizzlies are more abundant than at any time in the last century. And Montana is home to roughly 13,000 black bears, most of them, like the other big carnivores, living west of the Continental Divide.

Whether people welcome or curse this abundance depends on their values and interests. Hunters dislike competing with carnivores for elk and deer, and ranchers see predators as threats to their bottom line. Yet houndsmen are glad for additional mountain lions to chase. And more hikers, campers, and wildlife watchers than ever—many hunters among them—are enjoying the sight of a grizzly feeding on berries or hearing the haunting howls of a wolf pack at sundown.

One thing is certain: Having such healthy populations of black and grizzly bears, lions, and wolves combined with so many other wildlife species is unique to Montana among the lower 48 states. For many Montanans and visitors, it's another example of why the state stands apart.

Montana's carnivore abundance didn't occur out of the blue. By ending the long practice of poisoning, bounties, and other unregulated killing, federal and state laws provide protection. Just as important, the state's healthy big game populations provide protein.

TIM CHRISTIE; TIM CHRISTIE

Whether people welcome or curse this abundance depends on their values and interests.

Tolerance by hunters and livestock operators also contributes to Montana's carnivore abundance. "Because we're actively managing mountain lion, wolf, and bear populations in part to reduce impacts to prey populations and livestock, most hunters and ranchers don't seem to mind having some carnivores out there," says Ken McDonald, head of the Montana Fish, Wildlife & Parks Wildlife Division. "Many people don't understand that without that tolerance, we wouldn't have nearly as many [large carnivores] as we have."

In light of Montana's wildlife conservation tradition, it's not surprising the big meat eaters would eventually return. "Large carnivores reflect a broad-based wildlife restoration movement originally set in motion nearly a century ago," says McDonald. "It started with elk and other big game animals, then carried on with raptors like peregrine falcons and bald eagles. Lions, wolves, and bears are a natural continuation of that movement."

Today Montana is home to more large carnivores than at any time since statehood. The question now is what to do about it. Some say do nothing; let the animals be. A more reasoned response, say FWP officials, recognizes that large carnivores can pose a threat to human and pet safety, disrupt ranching operations, and take a bite out of deer and elk populations. "Obviously, management is essential," says McDonald.

Not an easy fix

Essential, yes, but by no means simple.

Deer and elk numbers in parts of western Montana are down in recent years, as is hunter harvest. Because wolves, mountain lions, and bears eat deer and elk, it's logical to conclude that large carnivores are responsible for the prey population declines. And, by extension, that the solution to rebuilding deer and elk herds is to reduce the number of fangs in the forest.

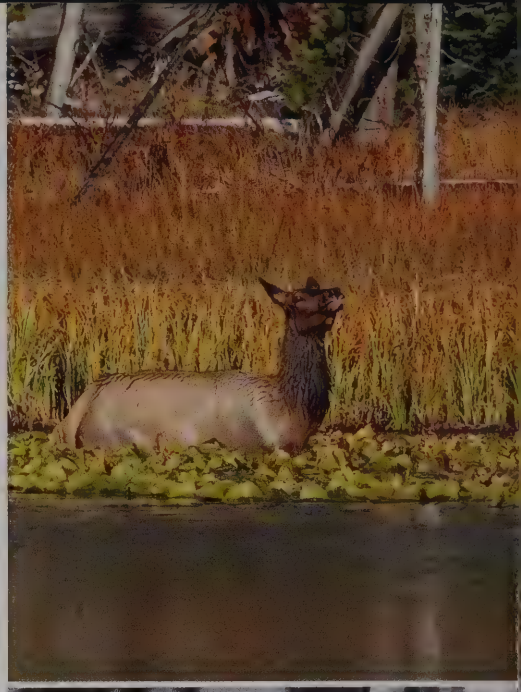
But it turns out things are not so straightforward. The main reason: It's difficult to know for certain what causes what.

For instance, though much public attention lately has centered on wolves, the wild canids are only one reason prey numbers and hunter harvests can decline. Habitat is critical. So is winter and summer weather. Then there's the growing tendency of deer and elk to find refuge on private land closed to public hunting. Add to all this two new studies in Wyoming and Montana showing that mountain lions and bears eat more elk than wolves do in some areas.

That all this is complicated should come as no surprise to hunters. Hunting itself is not much different. Hunters know firsthand that failure to fill a tag could be due to any combination of bad luck, hunting pressure, lack of snow, poor physical fitness, inadequate scouting, elk moving onto lands posted "No Trespassing," and more. "As in hunting, large carnivores are just one more factor in an already complex management equation," says McDonald. "There's no question we need to manage them, but we can't do that without also considering all the other components that drive prey populations."

Willing to act

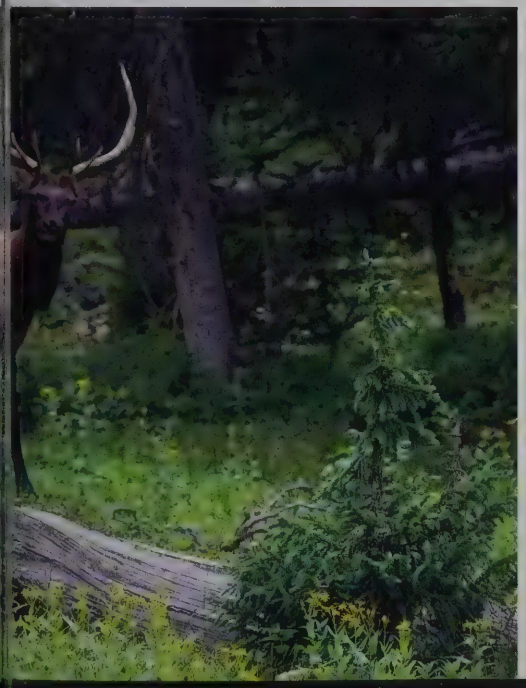
When FWP officials talk about large carnivore "management," they mean a combination of activities: research that figures out what's happening on the ground, monitoring to determine the size and trend of populations, preventative measures such as livestock guard dogs, and regulated hunting (and in some cases trapping) harvest. "FWP is committed to maintaining healthy, viable populations of wolves, bears, and lions," says McDonald. "But there's a point where too many can occur



WHAT STIRS THE DRINK? Top: There's no question wolves can take a bite out of elk and deer populations. But to what extent? Biologists and hunters know that winter severity (center) and the abundance of quality habitat (bottom) are still what drive most big game populations.

TOP TO BOTTOM: R.J. WESELMANN; DONALD M. JONES; VICTOR SCHENDEL

Tom Dickson is editor of Montana Outdoors.



in some places, and that's where we need to reduce or moderate numbers."

In response to growing carnivore populations, FWP has recently

- liberalized wolf harvest methods, extended seasons, lowered nonresident license costs, and taken other measures to reduce wolf numbers in targeted areas;
- increased lion harvest in dozens of western Montana hunting districts;
- lengthened the black bear season to increase harvest in western Montana;
- temporarily curtailed cow elk hunter harvest in key areas (such as the upper Bitterroot, Gardiner, upper Gallatin, and Big Hole Valley) to allow populations to recover; and (during the past decade)
- worked with federal agencies and Indian tribes toward delisting grizzly bears in the Northern Continental Divide (NCDE) and Greater Yellowstone Ecosystems.

In addition, wildlife biologists have begun devising customized prescriptions, or strategies, for solving predator-prey problems in parts of western Montana. For instance, in the hunting district on both sides of I-90 between Butte and Missoula—which has a relatively high elk density, a low carnivore density, and lots of private land—FWP is liberalizing wolf harvest to prevent numbers from increasing, while maintaining existing lion and bear seasons. And in the upper Bitterroot—with a relatively low elk density, high combined carnivore densities, and abundant forested public land—the department has temporarily increased female lion harvest and limited cow elk hunting opportunities until elk population numbers improve.

"The idea is to customize quotas and seasons to reflect what's actually going on in each hunting district," says Mike Thompson, FWP regional wildlife manager in Missoula.

Research scientists are monitoring each prescription to see if it requires adjustment. Though strategies in the areas cited above have shown early signs of success, Thompson says it's too early to draw conclusions about their effectiveness.

In some areas, FWP may also try to grow the overall size of deer and elk populations to overwhelm the effects of predators. "But for that to work, there has to be strong public support, and we'd need to work closely with landowners to provide more available habitat," says Thompson.

Is it up to FWP to decide how many wolves, bears, and lions should live in Montana?

Another idea is to find new ways for hunters to access private land currently off-limits to public hunting. "Do most hunters simply want us to eliminate predators, or is their goal really about having more and better deer and elk hunting opportunities?" says McDonald. "We think there might be ways to achieve the latter without going overboard with carnivore control and jeopardizing the delisting of wolves and grizzly bears."

FWP officials note that not all areas will respond to even the most carefully devised strategies. "In many parts of our region, native predators take much of the harvestable prey surplus following severe winters," says Jim Williams, FWP regional manager in northwestern Montana, home to most of the state's wolves as well as high lion, black bear, and grizzly bear densities. "We'll always have good bull and buck hunting here, and in some years we'll be able to issue antlerless tags. But it's unlikely we'll see doe and cow hunting in much of this region like we had in the old days before the restoration of large carnivores."

Growing body of carnivore research

It often makes sense to pare down carnivore numbers in some areas. But which species? And by how much? That's where research comes in. Without solid scientific data, wildlife managers can't know if they are removing enough carnivores or too many—or even whether carnivores are the main factor in prey declines. Preliminary results of an eight-year study begun in 2011 found that, contrary to expectations, lions are responsible for more calf deaths in the upper Bitterroot and Big Hole Valleys than wolves and black bears combined. "I was surprised

myself," says Mark Hebblewhite, a University of Montana assistant professor working with FWP on the study. "Like a lot of people, I assumed wolves were killing all the elk in these areas. But we were wrong. It's mainly lions."

A recently released study by the University of Wyoming and Wyoming Game and Fish, funded in part by the Rocky Mountain Elk Foundation and Safari Club International, looked at factors related to elk population declines in a popular northwestern Wyoming herd. Scientists found that the combination of grizzly predation and the loss of nutritious natural vegetation due to drought took a far greater toll on elk than wolves did. "Habitat quality determines elk body fat, which is critical in a cow's ability to rear calves and survive winter, regardless of predators," says lead researcher Arthur Middleton. Though wolves kill elk, Middleton found that grizzly bears remove far more of the ungulates—preying primarily on newborn calves—than wolves do, a finding that supports an earlier National Park Service study of elk in the Greater Yellowstone Ecosystem. "That's not to say wolves couldn't have a significant impact in other areas," the biologist adds.

The upshot? Killing more wolves may not necessarily give prey populations the boost hunters hope it will.

Among other significant large carnivore research findings in recent years:

- Scientists figured out a way to estimate black bear population densities based on precipitation patterns. The study also showed that Montana's bear harvest was not harming the population and could be increased.
- A current study is determining if the NCDE grizzly bear population (estimated now at roughly 1,000) is decreasing or, as results show so far, increasing. The information will further the process of federal delisting and restoring state management that could include hunting.
- In a major mountain lion study, researchers found that raising hunting quotas can rapidly knock down lion numbers, and that lowering quotas can help lion populations recover quickly.
- In another lion study, just finished, scientists found a way to estimate populations in various parts of the state based on the capacity of habitat to support the species, allowing wildlife biologists to more accurately predict mountain lion numbers in various parts of the state.
- Results of a northwestern Montana study showed that more than 50 percent of whitetail fawn deaths were caused by lions and coyotes.
- During several studies, scientists have found more accurate ways to determine wolf numbers and the effects of various harvest scenarios on population size.

"Without reliable information from these and other applied research projects, we'd risk wasting hunter license dollars on management that ended up not doing what it was supposed to do," says Justin Gude, head of FWP wildlife research programs.

Who decides?

There's that word again: "management." Like "control," "balance," and "healthy," there's no agreement among Montanans on what the terms mean when referring to large carnivore population size or distribution. Certainly it's FWP's job to manage large carnivores and big game, to understand the various factors affecting those populations, and to figure out how to raise or lower populations, primarily with public hunting. But is it up to wildlife officials to decide how many wolves, bears, and lions should live in certain parts of Montana?

FWP won't let large carnivore populations expand to where they unduly harm ranching operations and suppress deer and elk populations. And the agency is bound by law and mission to prevent extinction and maintain viable large carnivore populations. Between those two extremes, however, there's plenty of room for discussion and negotiation among various interests. FWP can provide science-based advice and guidance. But as to the actual size and mix of meat eater populations across the state, that may ultimately be up to Montanans to decide, collectively, for themselves.

ACTION PLAN FWP has responded to increasing carnivore populations with studies such as in the upper Bitterroot (top) to learn what is causing elk population declines. The department has also increased lion harvest (middle) and wolf harvest (bottom) in many areas.

TOP TO BOTTOM: MONTANA FWP; SUMIO HARADA; KENTON ROWE

Both new and complex

Weather, habitat, wildlife behavior, population dynamics, and land ownership are just some of what complicates FWP's ability to bring large carnivore and big game populations into better balance. For instance, the department must consider a wide range of needs and interests. Hunters want more deer and elk. Houndsmen ask for more lions. Wildlife watchers in the Yellowstone area oppose wolf hunting around the national park. And many livestock operators who think western Montana already has too many elk shudder to think of FWP trying to increase herd sizes in some areas to overwhelm the effects of large carnivores. Add to that the U.S. Fish & Wildlife Service, which maintains authority over grizzly bears and, with wolves, will allow the state to reduce populations only so far before the species becomes eligible for relisting under the Endangered Species Act.

Then there's the issue of wide-ranging carnivore movement. "Wolf and lion populations operate on a huge scale, sometimes spanning several states or into Canada," says Justin Gude, head of FWP wildlife research. "Increasing a carnivore harvest quota doesn't necessarily mean we reduce local numbers. If we want to reduce carnivores in a particular area, we may need to commit to a high harvest for a long time, which means Montana has to be willing to kill a lot of wolves and lions there."

Another factor, adds Gude, is that "reducing numbers of one species, like lions, might just make it that much easier for another species, like wolves, to eat what the lions were eating. And does removing wolves simply open the door for more coyotes, which take a huge toll on fawns?"

WHICH WAY? Montana is faced with many different options for balancing predator and prey populations. Which is the most effective? FWP researchers are trying to find out.

LUKE DUBAY/*MONTANA OUTDOORS*

Other factors include:

- **Weather:** "Along with habitat, it's rainfall, snow depth, winter temperatures, and other weather conditions that drive elk and deer populations, just as they did 20 years ago before we had all these carnivores," says Gude.
- **Elk finding refuge on private land:** In some parts of Montana, populations may not be down as much as hunters believe. Elk have simply learned to move onto the growing number of private ranches off-limits to public hunting.
- **Ranchers wanting fewer elk:** Several years ago, livestock operators frustrated by increasing depredation convinced the Montana Legislature to require FWP to lower elk numbers using high antlerless harvests, even as carnivore numbers were increasing.
- **The newness of large carnivore management:** "We are just coming out of the gate managing large carnivores and big game in combination," says Gude. "For instance, we've had only three full wolf harvest seasons to look at. That's why it's essential to study various management strategies so we can better predict what might happen under different scenarios. It's one thing the upper Bitterroot study is looking at. First we did baseline research, which ends this year. Then we liberalized large carnivore regulations to reduce wolf and lion numbers. Next we'll see the effects on both carnivores and big game prey." ■

TOO MANY MISSES

A nontoxic-shot ballistics expert helps bird hunters hit their targets.

BY TOM DICKSON

STRAIGHT SHOOTER Nontoxic-shot ballistics expert Tom Roster schools a groups of students on shooting proficiency. His cardinal rule: "The worst thing you can do is to shoot behind the target, because you aren't making use of all those pellets in the shot string. It's unforgivable."

You'd think it would be easy to kill a flying duck with a shotgun.

After all, many loads contain 150 to 175 pellets that, upon reaching the bird, are spread out in a swarm 3 to 5 feet in diameter and 6 to 8 feet long. How can anyone not hit the target with all that metal in the air?

Yet too often we do, either missing entirely or, even worse, wounding and then never recovering the duck.

Tom Roster has been working 30 years to change that.

A shotgun ballistics expert based in Oregon, Roster is a leading authority on shotgun ammunition efficiency and wounding loss in game bird hunting. He also was a longtime paid consultant with the recently discontinued CONSEP (Cooperative North American Shotgunning Education Program). The nonprofit organization was formed in 1982 and funded by several states' conservation agencies, including Montana Fish, Wildlife & Parks, to improve hunter proficiency with steel and other nontoxic shot. Nontoxic shot has been required for waterfowl hunting since the late 1980s, and is mandatory on federal waterfowl areas for all game bird hunting. The requirement grew out of concerns by waterfowl managers and hunters about lead poisoning in wildlife. Waterfowl ingest pellets when feeding on shallow lake bottoms containing spent shot, and bald eagles and other raptors are poisoned when feeding on birds wounded with lead but not retrieved.

As he has for the past three decades in locales across the country, Roster recently conducted a two-day shooting-proficiency seminar in Helena for roughly two dozen outdoor education specialists, game bird conservation group members, and hunter education instructors. He turned many of our long-held beliefs about steel and other nontoxic shot completely upside down.

WHY SO FEW HITS?

The primary reason bird hunters miss their mark is because the target is moving fast, and shooters misjudge its speed or angle of flight. They also misjudge distance. The optimum killing range for most ducks and geese is about 30 yards. If a hunter thinks a bird is that far away but it's really 50 yards off, the odds are that no pellets will strike the target's vital areas, though a few pellets may hit nonlethal body parts and wound the animal.

Another reason for crippling is that hunters accustomed to lead use the wrong load or the wrong choke when firing steel.

Finally, misconceptions exist among hunters as to what constitutes a normal daily waterfowl harvest. TV shows, DVDs, and magazine articles that show hunters regularly killing their limits of ducks and geese create the impression that high harvests are commonplace. That causes hunters to believe they should kill a limit just as "everyone else" seems to be doing. In fact, hunters nationwide actually kill an average of two ducks per day afield each year.

POOR REFLECTION

Wounding loss occurs when a hunter hits a duck or goose with pellets but does not retrieve the bird. According to CONSEP, a conservative average wounding rate for ducks and waterfowl nationwide by hunters is 25 percent, or one bird struck but unretrieved for every three hit and recovered. That translates into roughly 2.5 to 3 million lost ducks and another 1 million lost geese.

To lessen its effect on waterfowl populations, the U.S. Fish & Wildlife Service factors in this loss when making annual hunting regulations. Still, unretrieved ducks and geese don't end up on hunters' dinner plates. If one reason we hunt is to obtain food, wounding obviously makes that goal harder to achieve.

"Wounding also reflects poorly on hunters," says Ken McDonald, head of the FWP Wildlife Division. "Hunters and wildlife agencies have long been committed to hunting ethically and proficiently and taking all measures to reduce suffering of game animals. Out of respect for the resource, we have an obligation to understand and reduce wounding loss with birds and do what we can to improve our shooting."

McDonald notes that FWP does that with big game by requiring hunter safety and bowhunter education emphasizing ethical shot placement. "Improving shotgun shooting proficiency is along the same lines," he says.

Tom Dickson is editor of Montana Outdoors.

LEFT: TOM DICKSON; ABOVE RIGHT: RON HOFF

Tom Roster on:

What kills the bird

Roster has examined thousands of X-rays of dead ducks and geese. He says it's not the trauma of being hit by many pellets that kills a bird but the number of pellets (one or two minimum) that penetrate the brain, heart, lungs, or spinal column. A shooter's goal is to find the right choke that gives him or her enough pellets inside a 30-inch circle at 30 yards to ensure that at least one or two pellets hit those vital spots. Consult Rosters's lethality table, found in Montana's waterfowl regulations, for details.

Penetration

Roster says hunters can't kill a bird unless a few pellets penetrate a vital area. Because steel is lighter than lead, you need a bigger pellet to get the same penetration. So if you want a steel pellet to have the same penetration as a No. 4 lead pellet, it needs to be two shot sizes larger, or a No. 2 steel. For Roster's recommended steel shot sizes and chokes for various sizes of waterfowl, see his lethality table.

Steel versus lead

Steel appears to be saddled with several disadvantages when compared with lead: (1) Because the harder pellets deform less in the air and don't stray off to the sides, steel has a tighter pattern and therefore is less forgiving on misjudged shots; (2) also due to the fact that fewer pellets deform and slow down, it has a shorter shot string, making it less forgiving in this way, too; and (3) because steel is less dense than lead, shooters need larger

WHAT TO DO

According to Roster, duck and goose hunters can reduce crippling by taking some simple yet essential steps, including:

- Learn to judge distances to prevent shooting at birds beyond the effective killing range ("sky busting"). An easy way to practice is by drawing a silhouette of a mallard or Canada goose (depending on which you shoot most) on a sheet of plywood and then posting it at various distances. Look down your shotgun barrel to see how much of the muzzle obscures the silhouette, which you'll need to remember when you're in your blind while hunting. Freezout Lake Wildlife Management Area has silhouettes available for public use.
- Employ decoys and proficient calling to bring ducks and geese closer.
- Use a trained hunting dog to find and retrieve cripples.
- When you wound a bird, stop shooting immediately and make every effort to retrieve it (as state and federal waterfowl regulations require), no matter how far off it lands and even if doing so flares incoming birds.
- Use the right load and appropriate choke. Roster has developed a copyrighted nontoxic-shot lethality table showing the most effective loads and barrel chokes for different sizes of waterfowl at various distances. The comprehensive chart, found in Montana's waterfowl regulations, shows which nontoxic-shot sizes do the best job of penetrating the bird's vital areas with enough pellets to kill it.

The most important step hunters can take to reduce wounding loss is to learn to shoot more effectively. Over the past three decades, Roster has personally taught roughly 18,000 bird hunters worldwide to do just that. His three tips that registered most with me, someone who has been hunting ducks for 35 years:

(1) Envision the shot string. Just as I once did, many hunters picture pellets flying through the air at a uniform speed, arriving at their target at the same time, like a flyswatter slapping a window. But pellets move in a somewhat cylindrical "string," with the rounder ones out in front and those that deform lagging behind and spreading out. Due to wind resistance, lead has a longer shot string because the soft metal

Missed or wounded bird

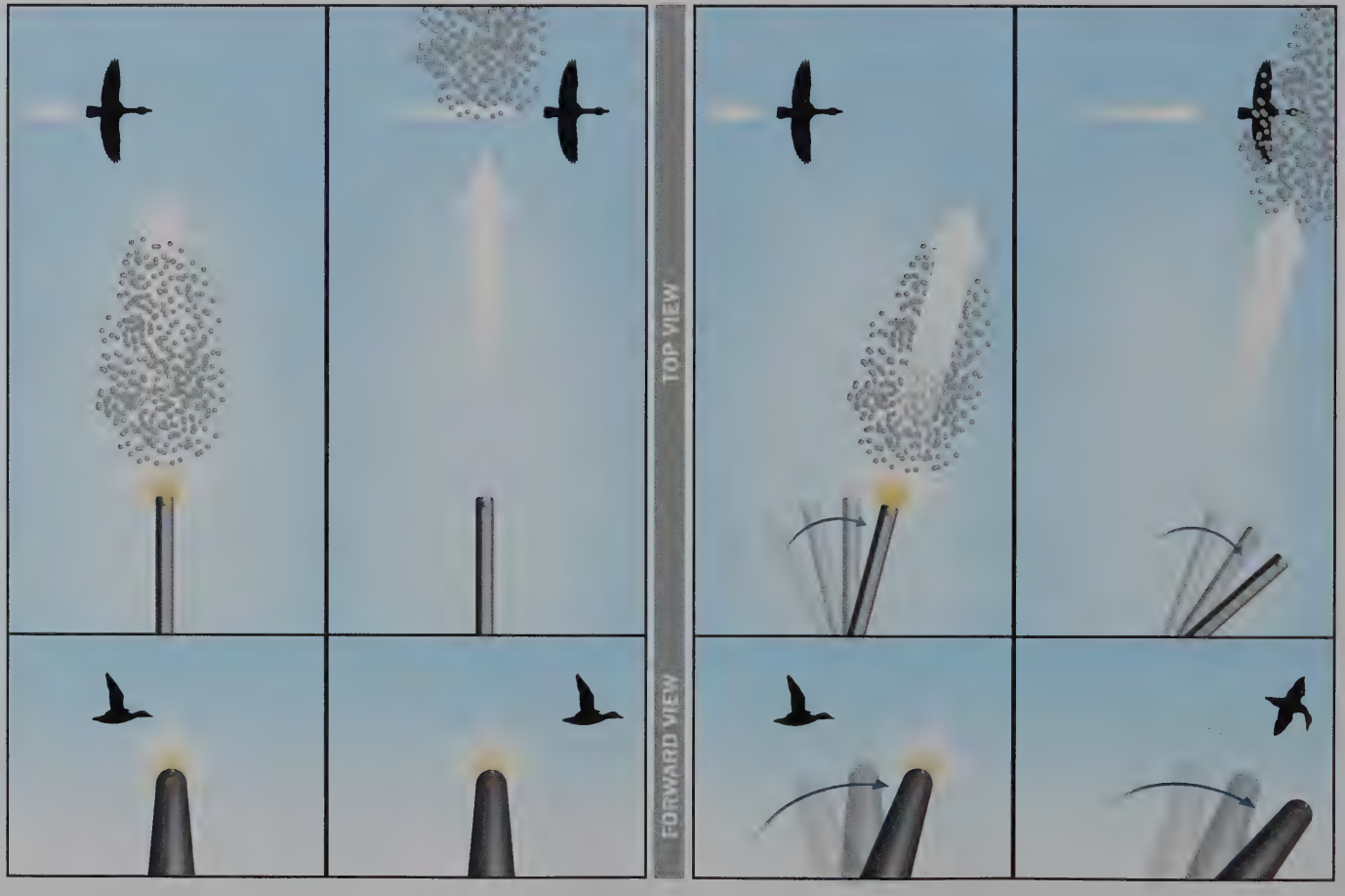
Shooters who fire at a bird or only slightly ahead...

...end up missing or wounding because most of the shot string ends up behind the bird.

Lethally hit bird

But when shooters swing through and fire ahead of the bird...

...the full "sofa-sized" shot string can do its work.



"PULL!" Tom Roster instructs a student during a recent shotgun shooting clinic. "Start behind, get ahead, shoot, and keep swinging," is his constant refrain.

deforms more when projected. Because steel and other nontoxic pellets are rounder and less likely to alter shape, the shot has a shorter string and tighter pattern. "So the string with hard nontoxic shot is only about half as long as the sloppy lead string, making it less forgiving," says Roster. Even so, at 30 or 40 yards nontoxic shot has a shot string that's about 7 feet long and 4 feet in diameter, about the size of a sofa. So now when I shoot I conceptualize my shotgun sending a sofa-sized volume of shot toward the target.

(2) Get *way* out in front. "The worst thing you can do is to shoot behind the target, because you aren't making use of all those pellets in the shot string. It's unforgivable," says Roster. "I tell every shooter to get way ahead of the target, much farther than you think you should be." That way, he explains, even if shooters are too far ahead with the beginning of their shot string, they'll still hit the target with the middle or end of it. "You have a lot more margin of error if you shoot too far ahead, but no margin if you shoot behind," Roster says.

I found that last sentence to be the single most important thing Roster said during a two-day seminar of telling us a lot of important things.

(3) Follow through. Roster says too often shooters don't swing through the target and end up stopping as they fire, causing them to shoot behind. "Start off with the muzzle behind the target, catch up to the target, pass the target and fire, then follow through after firing—all in one fluid motion," he says.

During the field workshop on day two of the seminar, I was there as Roster worked with a middle-aged shooter who has been hunting ducks since he was a teenager. Using a remote control, Roster ejected clay pigeons from a launcher left to right 30 yards out from the firing line. As he had repeatedly done for the previous hour with a dozen other students, Roster instructed the shooter, "Start behind, get ahead, shoot, and keep swinging."

The first clay pigeon was cleanly missed.

"You were behind. Get out more ahead," said Roster, who watched over the shooter's shoulder to view the shot string. "You want to start the barrel behind the target and a tad below, then move through the target and slam the trigger when you get past it."

The shooter missed a second time, and then insisted he was leading more than ever. A patient man, Roster looked frustrated nonetheless.

"This time get out *twice* as far ahead of the target as you think you should be."

Suddenly a lightbulb went off in the shooter's brain. He envisioned sending an entire sofa-shaped mass of shot far out in front of the next target. "Pull!" he said.

Roster launched the target. The shooter powdered it.

Said Roster, "Now that's what I'm talking about."

Roster sells DVDs of his shotgun shooting methods. Order "Shotgun Handling for Hunting," "Perfecting the Overhead and Side Shot," or "Pass Shooting Demonstrations and Techniques" by contacting him at tomroster@charter.net

pellets to get the same pellet weight and, thus, penetration into the bird. So using steel means fewer pellets in the air to hit the bird.

But Roster notes that disadvantage (1) can be overcome by opening the choke (say, from modified to improved cylinder). Shooters can overcome disadvantage (2) by improving shooting proficiency as explained on pages 30-31. And disadvantage (3) isn't in fact a problem. Roughly the same number of No. 4 lead pellets end up hitting the bird as do No. 2 steel pellets. Though the lead load contains more pellets, so many deform in flight they end up wobbling off to the sides and don't come anywhere near the target. It's not that steel shoots "too tight," as many shooters complain, Roster says. It's that lead shoots "too loose."

Barrel erosion and damage from steel

Early steel loads damaged barrels, says Roster, but all that changed starting in the 1980s. That's when manufacturers began using a shotcup system Roster designed and patented to encase the shot so it could move down the barrel without touching the interior surface. As for bulging, Roster says there is a small chance that steel could slightly bulge the muzzle of old European side-by-side shotguns—which have thinner, softer barrels—in full or modified choke. "But that happens very rarely," he says. Bulging may also occur on early model guns that have screw-in chokes not made for steel. "Always check the owner's manual," Roster advises.

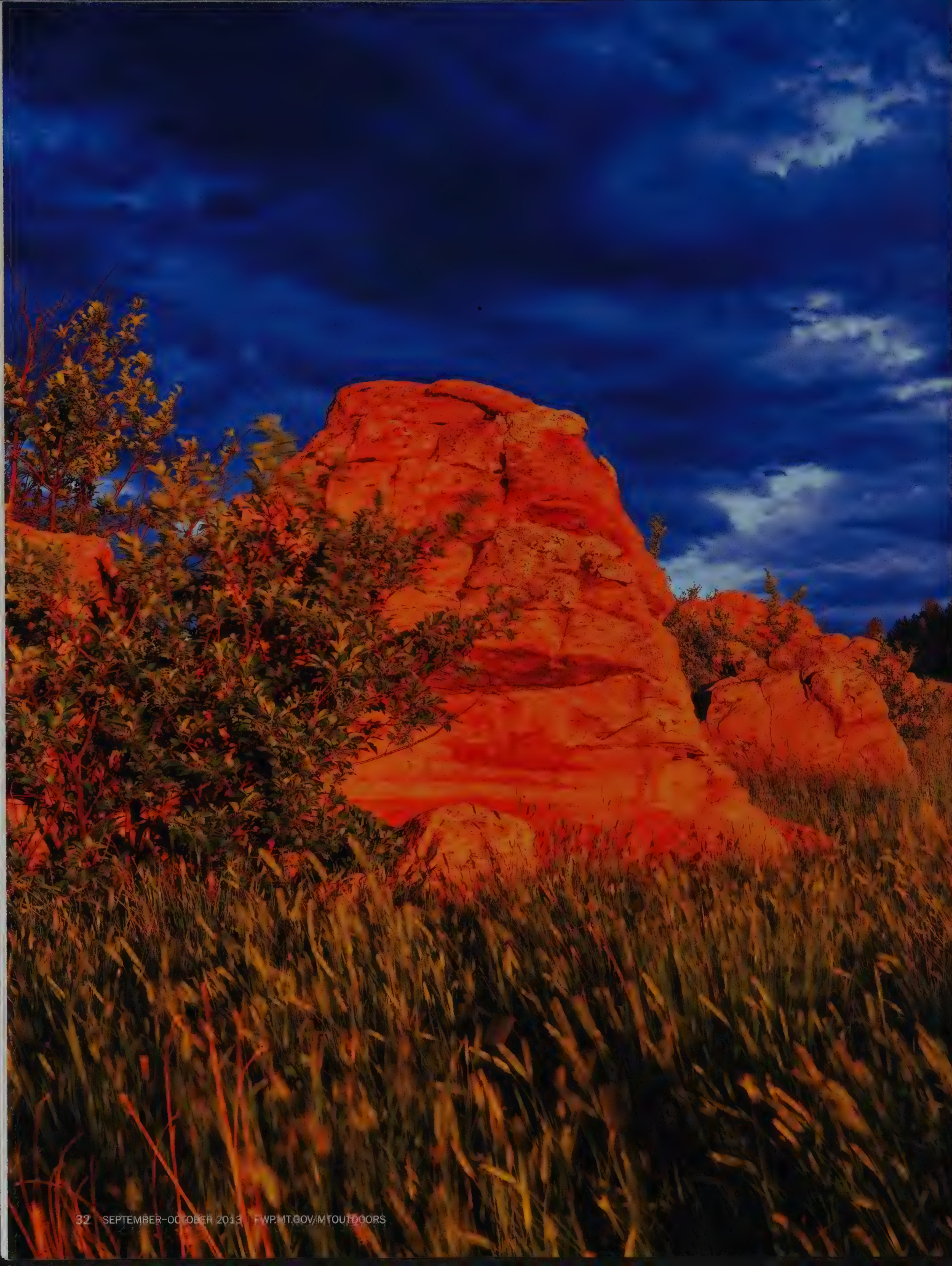
Choke

You want your choke to be as open as possible while still getting the necessary minimum number of pellets into a 30-inch circle at 30 yards. To determine this, pattern your gun with various loads to determine how open a choke you can get away with. Consult Roster's lethality table for his choke recommendations for various loads.

Other nontoxic loads

Despite two decades of tinkering with composites of bismuth, tungsten, nickel, and other metals, shell manufacturer have not found a way to equal the density of lead without doubling or tripling the price. "Most bird hunters are sticking with steel, which makes up nearly 90 percent of all nontoxic sales," says Roster. "It will remain king long into the future."

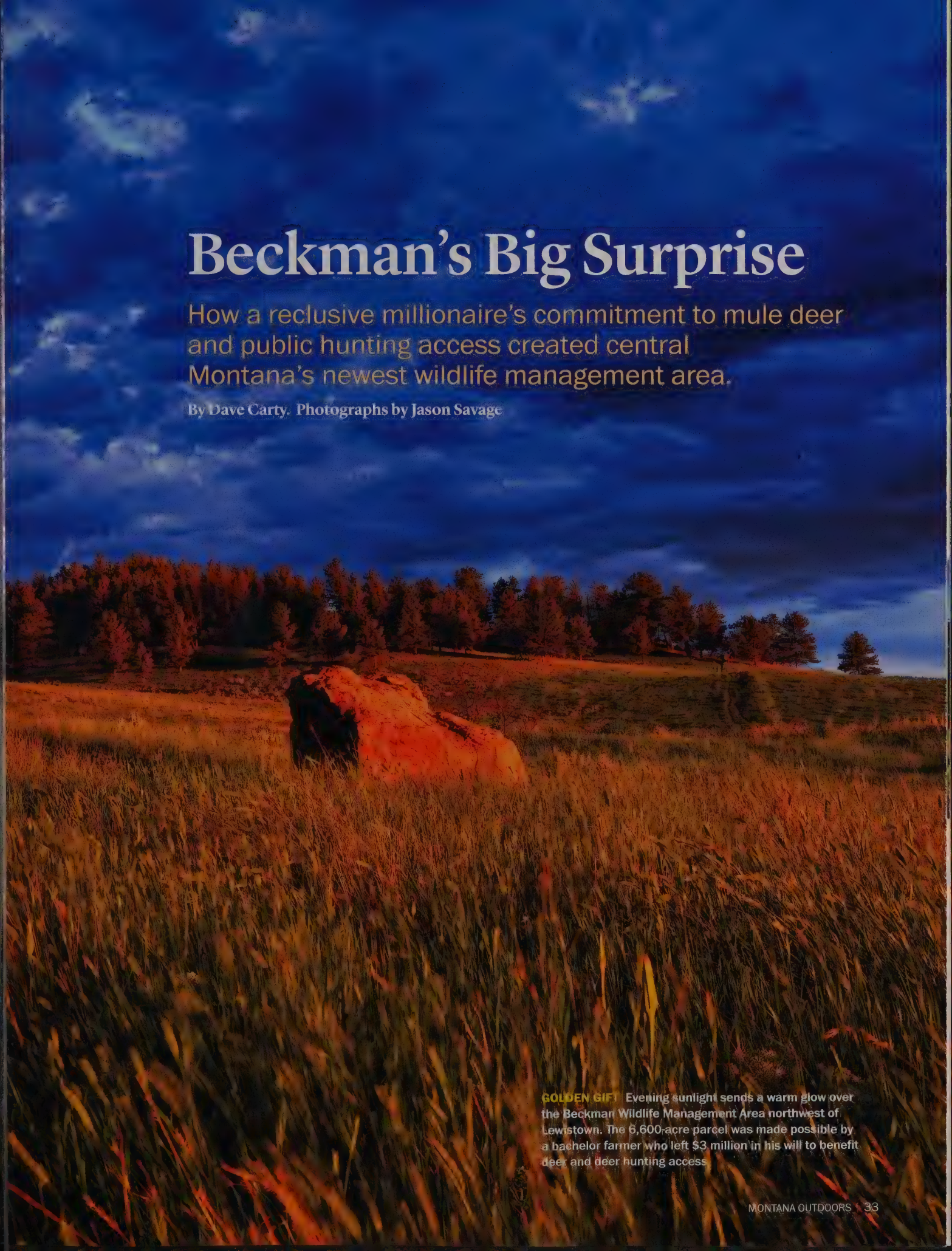
ILLUSTRATIONS BY LUKE DURAN/*MONTANA OUTDOORS*; ABOVE: TOM DICKSON



Beckman's Big Surprise

How a reclusive millionaire's commitment to mule deer and public hunting access created central Montana's newest wildlife management area.

By Dave Carty. Photographs by Jason Savage



GOLDEN GIFT Evening sunlight sends a warm glow over the Beckman Wildlife Management Area northwest of Lewistown. The 6,600-acre parcel was made possible by a bachelor farmer who left $3 million in his will to benefit deer and deer hunting access.

In honor of Leroy "R.B." Beckman, I was hoping we'd see some muleys.

But on a blustery day this past spring, the wind was blowing so hard I figured every deer in the vicinity would be hunkered down, trying not to get knocked into the next county. As Mark Schlepp, the Montana Fish, Wildlife & Parks central region wildlife area manager, drove us in his department pickup down a gravel road toward the Beckman Wildlife Management Area (WMA), the vehicle rocked as gusts hammered first one side then the other. If I were a mule deer, I thought, I wouldn't be out on a day like this.

Schlepp was giving me a tour of the Beckman so I could see for myself this remarkable wildlife area that I'd heard about and long wanted to visit.

Seen from the rimrock far above the Judith River, the Beckman at first looks like much of the other country in this part of central Montana—rolling to flat farmland and miles and miles of wheat and CRP (Conservation Reserve Program) grasses. But once you drop down into the WMA itself, which follows the serpentine course of the wild and free-flowing Judith for several miles, a new world opens. Rolling hills covered with ponderosa pine are home to Merriam's wild turkeys, while the river bottoms hold a healthy population of white-tailed deer. Pheasants live in the thick willows and lush grasslands along the river, while sharp-tailed grouse, Hungarian partridge, a small elk herd, and 20 or so pronghorn are found on the drier uplands. Songbirds thrive all over.

And then there are the mule deer—the reason this lush, wildlife-packed place came into state ownership in the first place.

What a will

Money to purchase the WMA came from R.B. Beckman, a reclusive bachelor who lived on the outskirts of Great Falls. Thought by neighbors to be penniless, Beckman wore patched bib overalls, drove an old panel truck filled with trash, heated just one room of his small house, and lived off a meager Social Security check. "He grew up poor, near Denton, where his mother was a schoolteacher," says Jim Luoma of Sand Coulee, Beckman's closest friend. Luoma says Beckman didn't smoke or drink and had only a few interests: buying and selling old guns, and hunting mule deer.

It was mule deer that Beckman wanted to benefit from the nearly $3 million he left in his will when he died in 1997, at age 88.

It turns out Beckman earned a bit of money farming as a young man and put his modest savings into gold mine stocks. "He was a smart man, but he also got lucky with those investments, because they made him a lot of money," Luoma says.

Under the terms of his will, a board of trustees that included Luoma (who also acted as Beckman's personal representative) was given specific instructions to purchase a piece of land in central Montana that would be put into public ownership for the enhancement and hunting of mule deer.

The board asked FWP to find a suitable site it could buy and then donate to the department.

The first purchase, in 1999, was a 2,560-acre parcel bisected by the Judith River. FWP acquired the land when it learned the owners wanted to sell the property so they could retire. At the time it was platted as a subdivision, but the couple decided to sell the land to FWP to preserve it as wildlife habitat. An adjacent 2,129-acre parcel was purchased two years later, and then a few smaller parcels were added to fill out the WMA, which today consists of 6,600 acres.

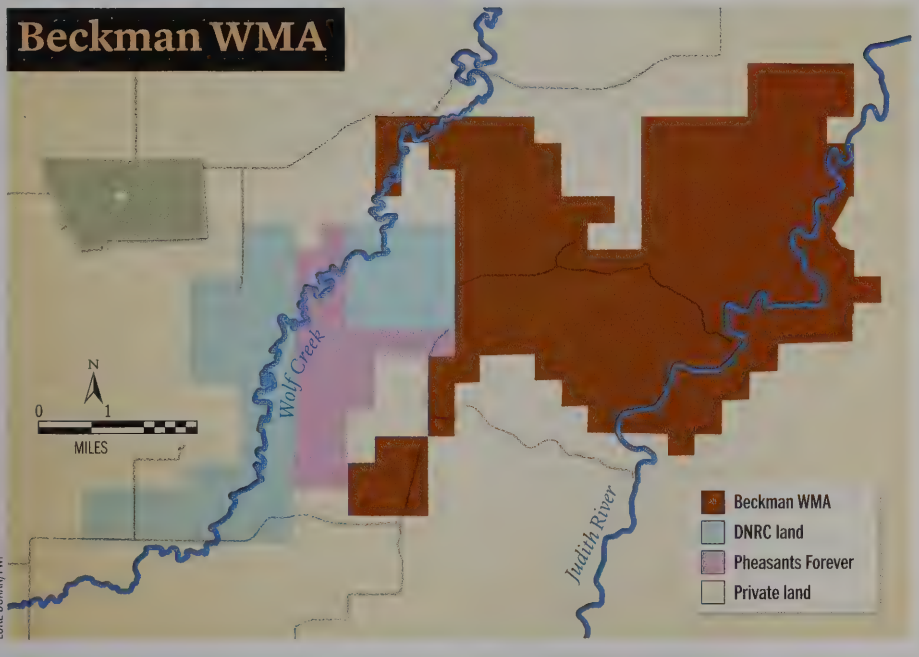
Sonja Smith, FWP area wildlife biologist in Lewistown, says the department takes seriously Beckman's wish that the area support a strong mule deer population. "The breaks-like habitat on Beckman, with the rimrock and ponderosa pine, is classic mule deer habitat," she says. "Our goal is to maintain strong mule deer numbers on and around the wildlife management area, though right now numbers are down throughout most of central Montana because of natural population fluctuations across the entire landscape."

Smith says FWP is helping muleys by maintaining irrigated crop fields in the bottomlands, which produce barley, wheat, and alfalfa. The department also lets an adjacent rancher rotationally graze cattle on the WMA in exchange for allowing public hunting on his property. "We're also working to increase elk harvest to reduce depredation on neighboring ranches and lessen competition for habitat with deer," she says.

Mosaic of wildlife lands

In addition to benefiting wildlife and recreation in its own right, the Beckman area anchors a mosaic of adjacent public and private conservation lands that in combination provide more than 10,000 acres of prime habitat and unfettered public access to hunting and wildlife watching. "From a wildlife management and public access standpoint, all this land blends together," Schlepp tells me, gesturing toward the horizon. Next to the Beckman WMA is the 1,000-acre Pheasants Forever Wolf Creek property, behind which is 1,800 acres of Department of Natural Resources and Conservation (DNRC) land. Also abutting the WMA is a DNRC school trust fund section. Pheasants Forever holds the lease on those 640 acres, allowing the conservation group to manage the land for grazing, small grain production, and wildlife habitat. Yet another part of this

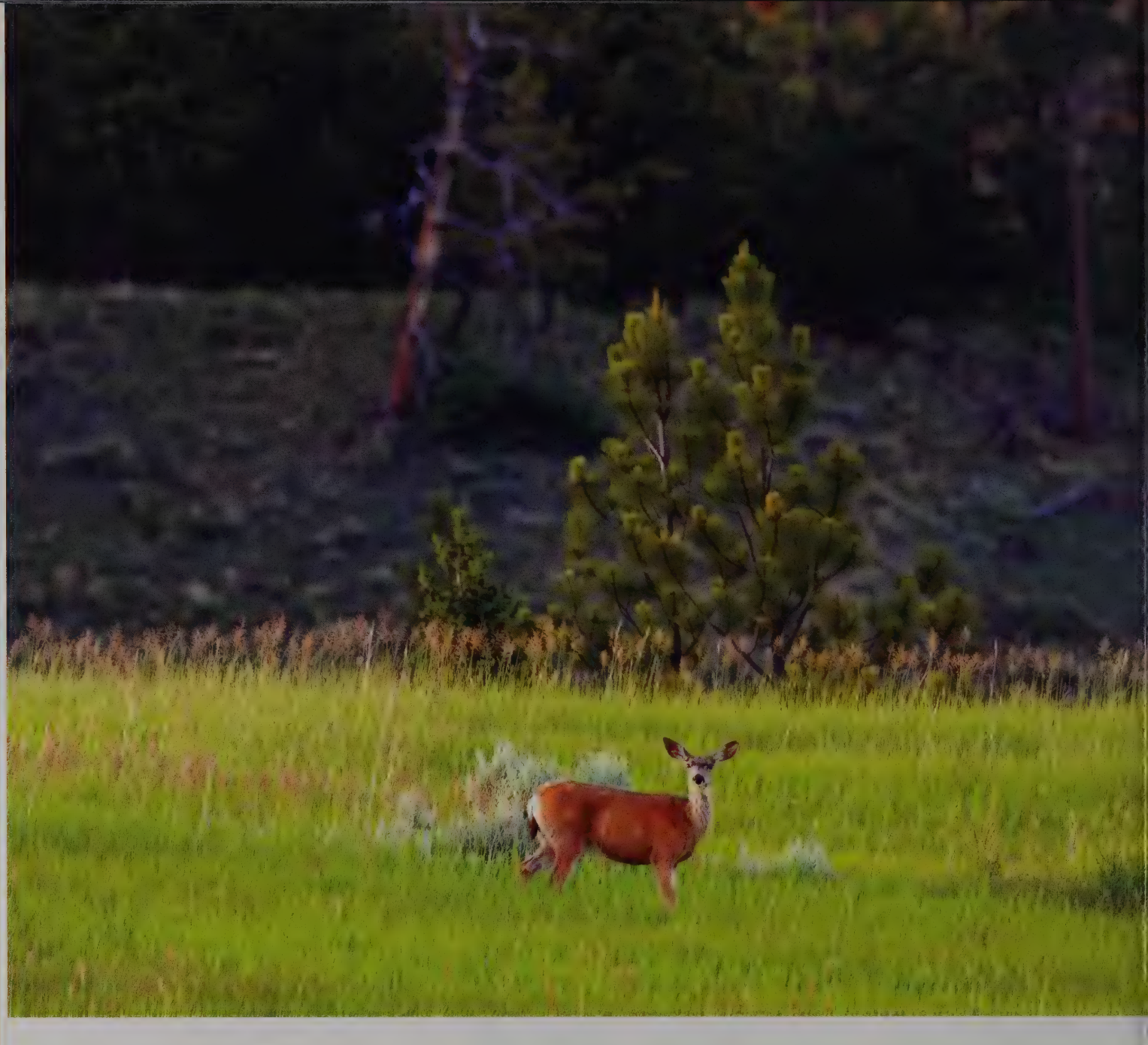
LUSH LANDSCAPE Top left: Filled with trout and smallmouth bass, the Judith River winds through verdant bottomlands of the Beckman WMA. Below: Nongame wildlife such as western meadowlarks abound on the wildlife management area. Below left: R.B. Beckman, whose secret estate allowed the wildlife haven to become public property.



LUKE DURAN/FWP

LANDSCAPE MOSAIC The Beckman WMA, roughly 20 miles northwest of Lewistown, is the centerpiece of a patchwork of public and private lands supporting wildlife habitat and hunter access totaling more than 10,000 acres.

> "From a wildlife management and public access standpoint, all this land blends together."



enormous complex of wildlife habitat is a large multi-unit Block Management Area.

"The Beckman is the centerpiece of an entire landscape of wildlife lands accessible to public use," says Schlepp. "Whatever we do on the WMA may have an effect that goes several miles north of here and several miles south."

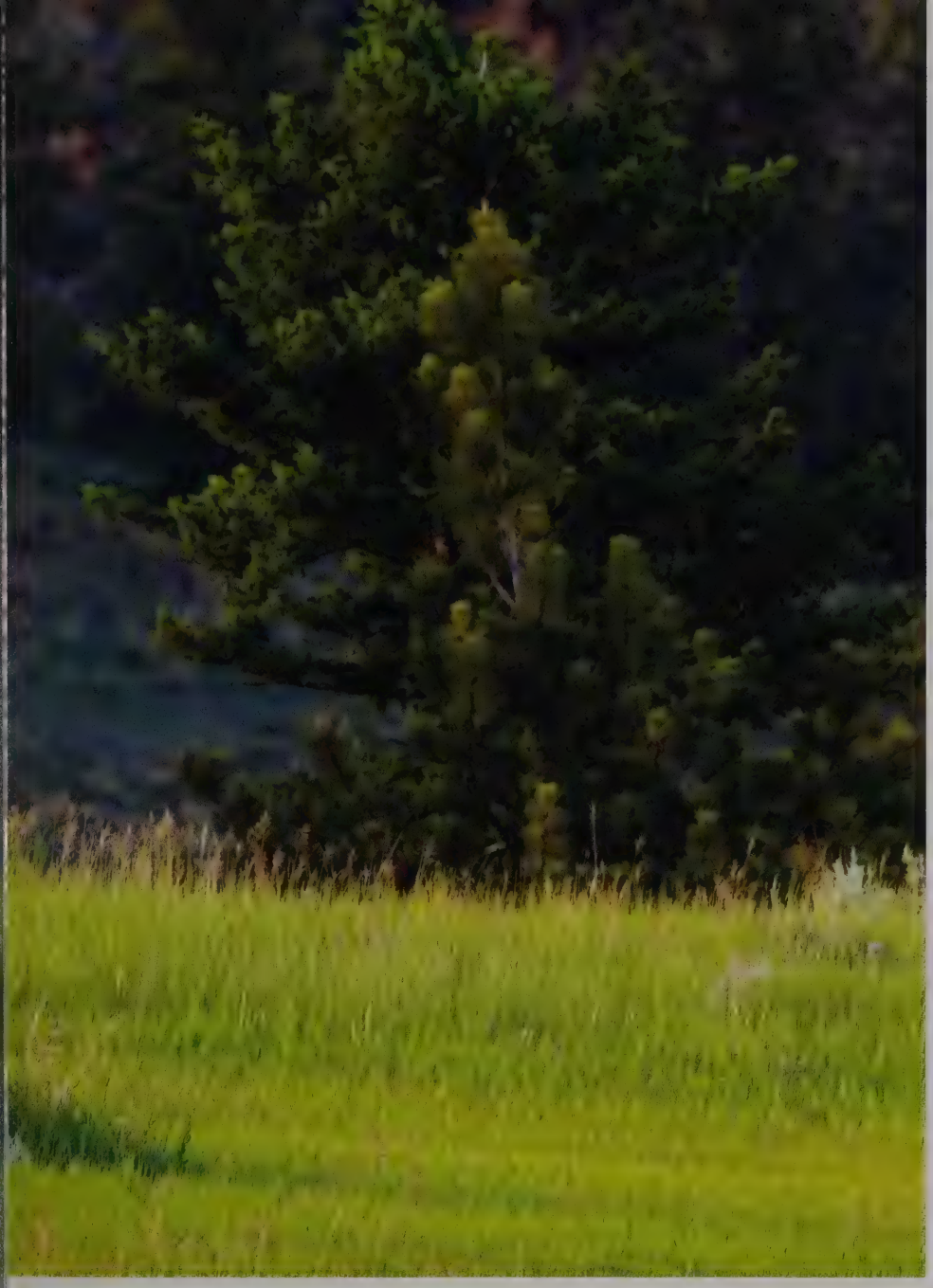
The Mule Deer Foundation, Montana Wildlife Federation, and other groups supported the Beckman WMA acquisition and management. Pheasants Forever (PF) has been especially active. Craig Roberts, president of PF's Central Montana Chapter, says his members planted five shelterbelts on the Beckman, the PF property, and adjoining DNRC land, and has another planned for the WMA in 2014. Plantings include buffalo berry, silver sage, chokecherry, golden currant, and Rocky Mountain juniper, totaling several miles of winter cover. All—including double rows of 36,000 silver sage shrubs that link the shelterbelts—were planted by hand, on soil cultivated and prepared a year in advance.

The group has also planted five wildlife food plots on the WMA.

Pheasants Forever generally doesn't buy and own land, but Roberts says the organization purchased the Wolf Creek property in 2008 because it connected the Beckman WMA to the 1,800 acres of DNRC property a mile or so to the west. "We were concerned the land would be subdivided, so we bit the bullet, did some intense fund-raising, and acquired it before we lost the opportunity," says Roberts, a retired DNRC area manager who lives in Lewistown. Some of the PF parcel is planted in wheat and barley, while the rest is in native grasses or in crested wheatgrass that Roberts says volunteers will eventually plant to native cover.

Roberts adds that PF's lease on the nearby section of school trust land allows the group to maintain 320 acres in wheat and barley cropland (half left fallow each year) and open the other half for intermittent grazing.

Dave Carty of Bozeman is a longtime contributor to Montana Outdoors.
Photographer Jason Savage lives in Helena.



ROOM FOR MORE Left: A mule deer doe pauses amid uplands framed by conifers. Pheasants, whitetails, wild turkeys, and other game animals abound, but mule deer are of particular importance on the Beckman. Though numbers are down throughout central Montana, FWP is improving habitat on the WMA to speed up recovery there. Below: A bluff on the Beckman overlooking the Judith River.

Constant maintenance

Those who think WMAs are simply purchased, fenced, and left alone would be surprised to see how much active management they require. On the day Schlepp was showing me around, he and another FWP employee inspected two portable water pumps as well as hundreds of feet of pipe that will deliver water to upland areas to irrigate hay and grain plots for deer, wild turkeys, and upland birds. A major project has involved spraying thousands of acres of weed-infested uplands to control spotted knapweed. "In some parts of the Beckman, the knapweed looked like a purple sea," Schlepp says. In addition, old fencing was coming down and new, wildlife-friendly fencing was going up so that parts of the WMA can be rest-rotation grazed. The managed grazing system invigorates native plant communities, benefiting the privately owned cattle as well as the public's mule deer and whitetails.

"This whole complex is a team effort," says Smith. "In addition to all that Pheasants Forever has done, a huge amount of credit goes to [former FWP Lewistown-area wildlife biologist] Tom Stivers. He wrote the original proposals, conducted public meetings, and figured out the grazing plan and how to get water to go to all the right places. And then there are the neighboring landowners. Much of the credit for all the wildlife around here goes to them for controlling

> "The Beckman is the centerpiece of an entire landscape of wildlife lands accessible to public use."

PLENTY TO SEE Lewistown area wildlife biologist Sonja Smith scans the landscape for signs of wildlife on the Beckman WMA. Facing page, clockwise from top left: mallard hen and ducklings; Wilson's snipe; mule deer buck in velvet; killdeer.

weeds, maintaining good grazing practices, and other types of land stewardship."

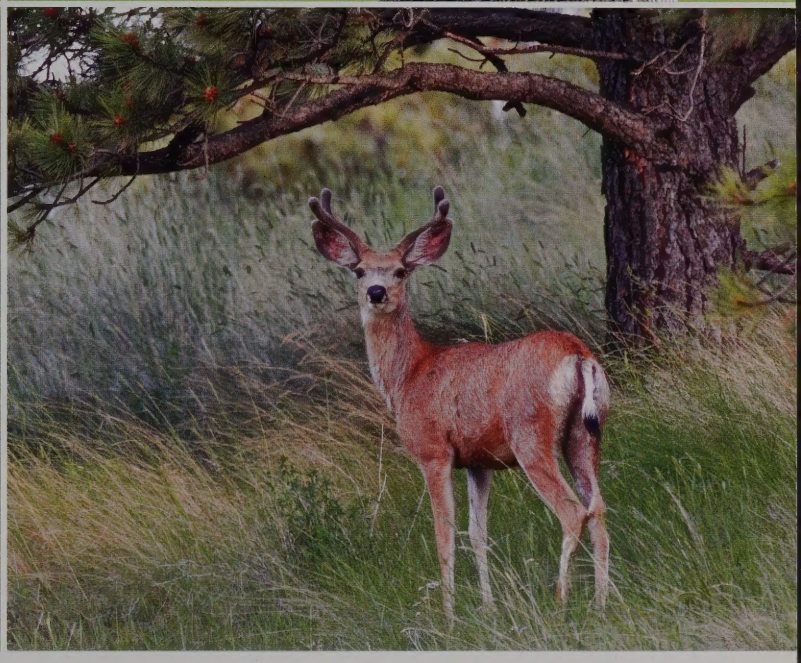
Spectacular scenery

During the extremely high water of spring 2011, much of the Judith blasted through existing curves in the river bed, creating entirely new channels. From a ridgeline hundreds of feet above, Schlepp pointed out the river's previous route. Already, isolated gravel bars were sprouting seedling cottonwoods, which, with cows now unable to graze them, have begun providing songbird habitat. In the distance sat an abandoned homestead, which had once been just a few yards off the water's edge but was now a quarter-mile from the river. A few decades from now the decripit build-

Sharing a farm worker

All work on the Pheasants Forever property and many habitat improvements on the Beckman WMA are done by Virgil Gluth, of Denton. The conservation group provides tractors, plows, seeders, and other equipment for Gluth's uplands management work, while FWP funds his seasonal position through its Upland Game Bird Enhancement Program. "Virgil has been invaluable to us out here," says Craig Roberts, president of Pheasants Forever's Central Montana Chapter. "He prepares soil for shelterbelt plantings, plants and weeds shelterbelts, builds and fixes fences, plants food plots, maintains the equipment—you name it. All the management activities here are coordinated through Virgil. He's the center of operations."

Gluth's handiwork: rows of shelterbelts



ing will have tumbled down and eroded into the prairie soil.

The Beckman land is what's known to biologists as a "transitional area"—topography that transitions from the water-sculpted breaks of the Judith River to the uplands hundreds of feet above. Seen from a high vantage point, the area is beautiful, with dry sandstone breaks, some rising 1,000 feet, contrasting with ponderosa pine, Douglas fir, and fertile bottomlands. At one point, Schlepp and I drove along nearly a half mile of white sandstone cliffs, on a smaller scale but every bit as spectacular as the much more famous White Cliffs of the Missouri River about 25 miles northwest. It was a treat to view this scenic wonder, hidden within a box canyon and virtually unknown to any but the handful of hikers and hunters who have discovered the place in recent years. The Judith—ordinarily low, clear, and filled with trout and increasing numbers of smallmouth bass—raged with peak runoff. On that cool and sunny spring afternoon, the place burst with green, fresh growth. Whitetails bounded from thickets along the river, and tracks of pheasants, turkeys, and sharp-tailed grouse crisscrossed dried mud in the road ahead of us.

All day I was hoping we'd see a few mule deer, too. And finally we did—two does, likely pregnant and about to drop their fawns.

No doubt R.B. Beckman would have been pleased.

For a detailed map of the Beckman WMA, visit the FWP website (fwp.mt.gov) and search for "Wildlife Management Areas."

> "Much of the credit for all the wildlife around here goes to neighboring landowners for controlling weeds, maintaining good grazing practices, and other types of land stewardship."

The September Itch

By Bruce Auchly

For most of us, the itch has been going on for a few weeks now.

The nights are cooler, the days shorter, the sun lower in the southern sky.

The itch.

The itch to be in the field—trying to bugle in an elk, following a dog along a coulee on a hunt for Hungarian partridge, scouting an antelope buck as he circles his harem of does.

The itch is as old as mankind. It dates back to our hunter-gatherer days when hunting meant survival and failure meant starvation. When prehistoric men and women lived in caves, drew pictures of their exploits on the walls, and spent nights around a fire retelling hunting tales.

Today we won't starve if we come home empty handed. Truth be told, it's probably cheaper to shop at the grocery store than depend on meat gathered from hunting.

Bruce Auchly manages the FWP regional Information and Education Program in Great Falls.

Instead, the itch to get out there is more about adventure. Remembering and reliving the times of our youth, charging up a hill after an elk or a pheasant. Some of us still run up the hills. Others let the youngsters do the running, waiting to see what comes out on the backside of the mountain.

Scratching the itch serves a purpose best put by Theodore Roosevelt, writing to Mrs. Roosevelt about why he needed to go hunting: "Sweetest little wife, I think all the time of my little laughing, teasing beauty...and I could almost cry I love you so. But I think the hunting will do me good."

We may laugh at Roosevelt's attempt to get out of the house, but our 26th president and cofounder of the Boone and Crockett Club was onto something. He was trying to ease the itch—though it's more complex than that.

There are lots of reasons why people in today's modern North American civilization hunt: meat, trophies, companionship. All are part of the itch that can be scratched only away from home.

Everyone admires the meat hunter, the man or woman who ventures forth to bring sustenance to the dinner table. Still, pencil in the cost of ammunition, gasoline, rifle, winter clothing, a four-wheel-drive truck, and game generally becomes more expensive than meat at the supermarket.

Trophy hunting often takes the biggest hit from critics. But if the antlers on the wall are meant to keep something beautiful from slipping away and being forgotten, well, that seems okay to me.

And companionship doesn't just have to be around the campfire. Many of us hunt alone, yet practically no one refuses to talk about his or her hunt. Any retelling makes the armchair listener a companion on that trek into the backcountry.

So as fall unfolds, and the guns and bows are brought out of the closet, consider how to scratch the itch. And remember that sometimes the most valuable prize brought home is the memory.

Cattail

Typha angustifolia and *latifolia*

By Ellen Horowitz

Pheasant and white-tailed deer hunters often keep a close eye on cattail marshes during fall. The wet, dense areas hold roosters and some dandy bucks, especially later in the season.

I do the same when hunting, but I also explore wetlands during other times of year. In fact, a cattail marsh formed the watery laboratory of my youth. By day, my brothers and I immersed ourselves in the lives of turtles, tadpoles, lily pads, dragonflies, and frogs. But by night, the cattails formed a barrier we never crossed on account of hair-raising stories we'd heard about swamp monsters.

Cattails remain a mystery to most people, despite the plants' easy recognition, wide distribution, and abundance. Adding to its mystique is the cattail's colorful common names, which include cat-of-nine tails, punk, corndog grass, water torch, and candlewick.

Where and how they grow

Montana is home to two species: the native broad-leaved cattail and the introduced narrow-leaved cattail. Both grow in marshes, ponds, sloughs, roadside ditches, and other wetlands. These resilient plants tolerate flooding and withstand drought, but ideal conditions consist of wet soils and full sun.

Cattails reproduce both from seeds and spreading root systems (rhizomes) that form clusters of cattail clones, similar to the growth of aspen trees. Cattail leaves grow rapidly in spring. By early to midsummer a 4- to 7-foot-tall stalk supports two cylindrical flower spikes. The narrow upper spike contains the short-lived male (pollen-bearing) flowers. The lower one contains female flowers (which eventually turn brown). In winter, the sausage-shaped flower head morphs into white cottony fluff, or down, containing seeds. That's what pheasant hunters see in the air when their dogs are rooting out roosters from a frozen marsh.

Ellen Horowitz is a writer in Columbia Falls.

SHUTTERSTOCK

Scientific name

Typha is from the Greek word *typhe*, meaning cattail. ***Angustifolia*** is Latin for "narrow leaf" and ***latifolia*** is Latin for "broad leaf."

Life among cattails

Cattail stands provide food, shelter, nesting, and hiding cover for wildlife. When cattails grow next to farmland, pheasants use them as hideouts from predators and for thermal protection from brutal winds, icy temperatures, and heavy snow. When growing in complex marsh ecosystems, cattails attract marsh wrens along with red-winged and yellow-headed blackbirds, all of which attach nests woven of the plant's leaves to its sturdy upright stalks. Ruddy ducks, canvasbacks, redheads, grebes, and coots nest in or around cattails. Hard-to-find birds such as American bitterns, Virginia rails, and soras also nest there. American goldfinches, cedar waxwings, and many other songbirds line their nests with cattail down.

Canada geese and some duck species feed on cattail roots and shoots. Painted turtles eat the seeds and stems. Muskrats gnaw on the roots and use the leaves for building their lodges and feeding platforms.

Cattail cuisine

People also are attracted to the cattail's edible, nutritious, and tasty parts, from its starchy roots to the pollen-filled flowers. In his *Stalking the Wild Asparagus*, Euell Gibbons refers to cattails as the "supermarket of the swamps." In spring, the tender shoots can be eaten raw or cooked. In summer, the immature flower spikes can be steamed or boiled and eaten like corn on the cob. Some people add cattail pollen to pancake mixes, biscuits, and bread. The roots can be peeled and cooked, or dried and ground into flour.

Other uses

For years people used cattails as a source of useful materials. Dried flower heads, when dipped in oil and lit, became torches. Cattail down worked as fire-starting tinder, mattress filling, and boot insulation. The long, sturdy leaves were woven into mats or used as chair caning. These days, crafters collect the brown fuzzy flowers for decoration.

Of all things related to cattails, the most significant value is the habitat they provide. And that's beneficial not only to wildlife. Cattail marshes rank high on the list of places I go to watch and listen to birds and other animals. When I hear the eerie, thumping, percolating sounds of the bittern, or the long, descending whinny of a sora, I recall the magic (and monsters) of the cattail marsh of my childhood.

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PARTING SHOT

THE GRASS IS ALWAYS GREENER To reach lusher pasture, a mule deer buck tentatively crosses the Judith River in the Beckman Wildlife Management Area. See page 32 to find out what other wildlife this central Montana WMA has to offer. Photo by Jason Savage.

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